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STUDY OF CHILDREN'S BEHAVIOR WHILE READING ORALLY. FINAL REPORT.

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Psycholinguistic knowledge and techniques can be used as the basis for reading process research with a view to the development of a reading theory. The initial phase of such a study is reported, and reading behavior on a comprehensive basis is examined. The assumption upon which the research is based is that reading miscues are generated by the same process that generates expected responses. The oral reading behavior of 12 children reading a story selected from a basal reader was examined. These subjects were fourth- and fifth-graders who were determined by informal test and teacher evaluation to be proficient readers. Initial analysis of miscues led to the formulation of a taxonomy of reading miscues. Questions concerning each miscue were asked. Change and acceptability were examined semantically and syntactically at the phonemic, morphemic, and syntactic levels. Miscues were examined, compared, and contrasted in terms of their component parts, relative value, and levels of involvement. References are listed. Appendixes include material on computer coding which uses the taxonomy of cues and miscues, a comprehension rating sheet, and a reading research data sheet. (Author/BS)

FINAL REPORT

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Director: Kenneth S. Goodman
Wayne State University
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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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SUMMARY

This study should be regarded as part of a larger effort to describe the reading process and develop a theory of that process. The central device used is the study of the miscues (unexpected responses) of children reading unfamiliar material. These unexpected responses are compared with the expected responses; our assumption is that differences are not accidental or random but are generated in the reading process itself.

The study we report here categorized the reading miscues (about 1200) of 12 fourth and fifth grade children, reading the same sixth grade story, according to a previously developed taxonomy. We asked 28 questions, covering the psycholinguistic categories of the taxonomy, about each miscue. The findings are too voluminous to repeat here. They are summarized after each section in the body of the report.

We will confine ourselves here to stating what appear to be the major outcomes of the study.

1. The basic research approach and the assumptions on which it is based have been supported. We can categorize reading miscues according to the linguistic and psycholinguistic phenomena they represent. Further, we do get substantial insights into the reading process through this analysis.

2. The depth description of the reading skills, strategies, and techniques of each subject is in itself a useful product. It appears that a very powerful diagnostic test and/or informal reading inventory could be based on this analysis.

3. We have confirmed the inter-play of syntactic, semantic, and graphophonic information in the reading process of these youngsters. Particularly, the study has demonstrated the extent that syntactic information is used by readers.

4. The study has confirmed and demonstrated the great importance of the self-correction of miscues by readers. The learning that takes place through correction is also of great importance.

5. The study appears to support a model of reading which makes it parallel to listening. Several of our subjects did not seem to go through oral language in reading. They seemed to be decoding directly from print in many instances. In fact, at the level of proficiency we found some of these pupils, oral reading is clumsy. The children appear to be disturbed by having to encode orally.

6. The study provided us with a basis of comparison with other groups of readers. In a sense we have a base point here which can serve to contrast with subjects in subsequent stories.

7. The study has confirmed that the phenomena observable in a study of the total language situation yield far more insights than phenomena observable in studies where language aspects are extracted from the language process.

   Only when we can see all aspects of language and language use interacting can we get the full picture revealed in this study.

8. We are able as a result of this study to advance some hunches about teaching reading. Briefly, a few key ones are:

   a. Children should be encouraged to detect and correct their own miscues. Teachers should avoid prompting and correcting.

   b. Skills should be taught in direct relation to the reading of whole language rather than in skill drills.

   c. Children should be assisted in developing strategies for using grammatical and semantic cues as well as phonic cues in reading.

   d. Material children read must be "decodable" language to them. It must, in other words, make sense.

I

INTRODUCTION

The study reported here is a small part of a program of psycholinguistically based research designed to facilitate development of a theory of the reading process. It is the first portion of this research to receive outside funds, though the research has been ongoing since 1963.

Essentially the current phase of this research analyses the unexpected oral reading responses of children reading unfamiliar material orally. Any observed response (O. R.) which departs from the expected response (E. R.) is termed a miscue. The key assumption is that miscues are generated by the same process that generates expected responses. By careful analysis of miscues, the researcher hopes to gain insights into the reading process.

TAXONOMY

Throughout this research there is a constant interplay between theory and data. Prior to this study, this led to the development and improvement of a taxonomy of cues and miscues in reading. For this study, a computer program based on this taxonomy was designed to manipulate and analyse the complex aspects involved in each reader's miscues.

The description of the categories in the computer analysis is included in the appendix of this report.

RATIONAL

The process of reading has been studied extensively, but without recognition of the fact that reading is essentially a psycholinguistic process. Readers respond to language in the form of graphic display. They derive meaning by responding to graphic symbols arranged in systematic ways. Children learning to read their native language have already acquired the ability to decode oral language which uses sounds as symbols.

In reading, three kinds of information appear to be used by readers. These are: grapho-phonic, semantic and syntactic (Goodman, 1967). This study examined the miscues of a group of 12 fourth and fifth grade relatively proficient readers who were reading an unfamiliar story from a sixth grade basal reader. The concern of this study was the categorization of their miscues according to their characteristics and the kinds of information involved in their production. Through it, we sought, at the same time, to validate the psycholinguistic view on which the research is based and to get a picture of the reading process in these children.

RELATED RESEARCH

Though educational research in the field of reading is prodigous,

little of it has incorporated any degree of modern understanding of language and language use as revealed through linguistic and psycholinguistic insights. Methodological studies dominate reading research. These are largely theoretical and amount to a kind of controlled trial and error.

The work of Bormuth and others on readability (1965) is an exception. Bormuth has successfully built a linguistically sound base for readability and as a result, improved readability formulas considerably.

Some research in psychology has begun to examine aspects of reading in linguistically valid ways, though here again such research is distinctly in the minority. Carterette and Jones have studied redundancy and language units(1965). Kolers has been studying reading of proficient adults through use of distorted texts. A group of studies have been produced through Project Literacy (notably those of H. Levin, E. Gibson).

Linguists have, unfortunately, been more ready to speculate on how to teach reading than to engage in research on reading. Thus, Henry Lee Smith, C. C. Fries, Robert Allen and Leonard Bloomfield are all represented by published materials. Two books, one by Fries (1964) and the other by Lefevre (1964) on linguistics and reading, have appeared.

The body of research most closely related to this study, that dealing with analysis of reading errors, is no exception. Primarily study of children's errors has been for the purpose of identifying their weaknesses. It has been based on the eclectic view of reading which is widely held by reading authorities. Categories overlap, are highly subjective and are not parallel. Furthermore, though researchers have borrowed categories from each other, no two have defined their categories or used them in the same way.

Recent exceptions are unpublished studies by Weber (1967), Clay (1967) and Y. Goodman (1967). Though these studies differ greatly, they share common interest in reading and reading development as processes and a common belief in linguistics as foundational in understanding these processes.

PROCEDURES

In this study, twelve children were selected by their teachers as children who did a great deal of silent "pleasure" reading. Eight were fourth graders and four were fifth graders. The children all read the same unfamiliar story, "My Brother is A Genius" from a sixth grade basal reader (1963). Subjects were asked to read the story orally. As the subject read, his reading was tape recorded and an assistant marked his miscues on a type script of the story. No assistance of any kind was offered to the student.

Each subject was then asked to retell the story. An assistant used a series of questions to stimulate this retelling, if it proved necessary.

Each miscue was then coded for the categories of the taxonomy. The tape was used along with the typescript. The coding of each child's miscues took about fifteen hours. (This explains why only one of several studies in the proposal was actually completed.)

Data collected in addition to miscue data included regressions (repeats), naturalness rating and comprehension scores.

Material Selection - The main concern in selection of the material to be read was that it represent a moderately difficult reading level for the subject. The material needed to be difficult enough so that the subjects would experience difficulty just below a frustration level that might cause them to give up on the task.

It was decided to use material from a basal text series as it would already have been graded according to an expected readability difficulty and would be in a style and format familiar to the subjects. At the same time, a series was selected which the children had never used to assure that the material would be new to the reader.

A representative story was then selected from each of the levels, pre-primer through sixth grade. Each story has an accompanying word list. The children in this study were those in the 4th and 5th grades who read an advanced sixth grade story.

Taping Processes - Each session with a subject was recorded on audio tape and included the reading of word lists and a story, and the retelling of the story.

The subject was told at the start of a session that the researcher was trying to find out more about how boys and girls learn to read and that to do so he would like the child to read for him while he recorded. The subject was also assured that the researcher was not "grading" him and that this was not a "class".

The subjects were told that they would receive no help in reading the story. They were told to "do the best you can" when they encountered difficulty.

At the end of the reading, the child was asked to re-count the story in his own words and to interpret what he thought the story was about.

During the reading, the researcher kept a written record, in addition to the tape recording. Reading miscues and subject behavior were recorded on a duplicate copy of the story being read. This copy was edited and corrected in a later listening session.

A word needs to be said about the indispensable need to electronically record the reading, since several studies of children's reading have depended on what the researcher could note during the actual reading. We found that it was often necessary to listen repeatedly to the tape to identify precisely what the reader had done. We also were able to recover a substantial number of miscues which

had been missed by the assistant during the actual reading. A small experiment with use of 1/2 inch video-tape convinced us that, if possible, video taping would add considerably to the validity of the analysis, since it places the reading in a total context and provides visual information.

Depth Analysis - Most research studies in reading have chosen to study a few variables over relatively large groups. A study over all possible variables involved in reading miscues becomes a depth study. Such a study, even with the aid of the computer, must be limited to a small number of subjects. One variable for ten subjects generates the same volume of data as ten variables for one subject.

If we understand in depth the reading of a small number of children, we will have learned more in any case than single variable large group studies can possibly teach us. Reading is in the last analysis a personal, individual process. What is lost in such depth studies is the neat package of measures of statistical significance that apply to studies with large numbers of subjects. Such measures are not meaningful for the data of this study.

II

DATA

Since each miscue has been categorized under all pertinent variables, a large mass of interrelated data has been generated. Some of this data dealing with the percent of miscues which involved each variable and each sub-category within each variable is easy to present. But, the most significant results of the data are in the interrelationships of variables. To present these most meaningfully, we have elected to use four focal points.

A. General Miscues
B. Corrections
C. Regressions
D. Syntactic Information

At one or more points relationships to all other variables are discussed.

A. GENERAL MISCUES

Miscues are the basic elements of examination within the research. They may be defined as observed responses which differ from expected responses. We choose to call them miscues rather than errors because the latter term implies a value judgment which we seek to avoid. Miscues are not necessarily bad.

Type of Miscues - Miscues have been divided into six sub-categories for the purpose of the research. A miscue can involve the substitution of one element for another.

E. R. I opened the dictionary and picked out a word that sounded good,

O. R. I opened the book and picked out a word that sounded good.

The insertion of an element can be involved in a miscue.

E. R. The next day at noon, as soon as classes let out for lunch, I called the local television station.

O. R. The next day at noon, as soon as the classes let out for lunch, I called the local television station.

The omission of an element can constitute the miscue.

E. R. I went on reading the words aloud.

O. R. I went on reading words aloud.

A reversal of position between two elements is involved in another kind of miscue.

E. R. So education it was!

O. R. So education was it?

A second kind of reversal miscue also involves a substitution, insertion or omission.

E. R. Philosophical: showing calmness and courage in the face of ill fortune.

O. R. Philosophical: showing claimness and courage in the face of ill fortune.

One final miscue type is a substitution which also involves an insertion or an omission at either the phrase or word level.

E. R. Besides, our teacher says if you know how to think and know enough words to express your thoughts, there isn't anything you can't say or do.

O. R. Besides, our teacher says if you know how to think and have words to express your thoughts, there isn't anything you can't say or do.

One aspect in the identification of miscues had to be based upon an arbitrary decision of the researcher. The handling of dialect and possible speech idiosyncrasies was involved. The researcher's own dialect became the standard for the purposes of the research. Speech patterns which were determined to be common to the speech of educated speakers within the area were not marked as miscues.

Against this criterion, the use of an' in place of and in the

phrase, You an' I, is not considered a miscue because it is an expected response among educated speakers in the area. However, substitutions of dat for that, towards for toward and cawed for called were handled as miscues within the research.

Miscues Per Hundred Words - There were 1120 miscues made by twelve subjects, or an average of 93.3 miscues in an oral reading task that had a count of 2052 running words. Eight 4th graders made a total of 835 miscues (or an average of 104.38 miscues). Four 5th graders averaged 74.25 miscues.

For purposes of comparison, we have used miscues per hundred words (MPHW) in the following discussions.

TABLE 1

MPHW and Comprehension Scores
for Individual Subjects

Subject		MPHW	Comprehension
4th	32	8.72	27
	34	2.58	30
	35	2.68	34
	37	3.31	27
	39	1.90	26
	40	8.48	22
	41	6.29	15
	42	6.87	25
5th	54	5.70	23
	55	2.19	32
	57	2.63	36
	64	3.26	32

Miscues and Comprehension -

MPHW ranged from a low of 1.90 to a high of 8.72. (See Table 1) Compare this to the common rule of thumb that children should not make more than 5 errors in 100 words.

When comprehension ratings are added to the consideration, a slight trend emerges. There is a negative correlation between MPHW and comprehension; as MPHW increase, there tends to be a decrease in comprehension.

This data must be examined in light of the fact that all of the comprehension scores, with the exception of one, are within the range of average to superior. Subjects 39, 37 and 32, with about the same comprehension, had very different rates of MPHW.

One possible explanation for the slight negative correlation could be tied to the subject's varying proficiency in the oral reading mode. At least five of the subjects (#55, 57, 64, 39, 35) who have a low number of miscues have established patterns of recreational reading outside of school. For three of these subjects, it has been established that this is an oral reading situation. (One subject reads aloud to her mother daily. The other two subjects are sisters who read to each other when playing school.)

The drop in reading comprehension for some of the subjects might reflect the increased attention which they are having to give to the oral reading process.

TABLE 2

Grammatical Category of Miscues

Subject	Noun	Verb	Adjective	Adverb	Function Word	Indeter-minant
Total	225 .241	175 .188	110 .118	67 .072	284 .305	71 .076
4th	166 .243	122 .178	79 .116	42 .061	219 .320	56 .082
5th	59 .238	53 .214	31 .125	25 .101	65 .262	15 .061
% in Text	30	17	8	6	36	2

Miscues by Grammatical Function -

When the percentage of miscues involving a grammatical function is compared to the actual percentage of occurrence for that grammatical function within the text, three figures stand out:

1. The percentage of difficulty experienced with words functioning as nouns is actually lower than the occurrence of nouns in the text. (See Table 2)

2. The situation concerning adjectives is reversed. There is an appreciably higher percentage of miscues within this grammatical function than can be accounted for by the percentage of their occurrence in the text.

   It would seem to follow from these two figures that nouns present less difficulty to the reader than can be anticipated by their actual rate of appearance in texts, while adjectives are disportionately difficult.

3. The percentage of miscues occurring within the sub-category marked indeterminate (words with no grammatical function) is quite a bit higher than the actual percentage of their occurrence in the text. This is an expected phenomenon when consideration is given to the fact that structural and semantic clues are not available for attack upon these words.

For the remaining sub-categories - verbs, adverbs and function words - the percentage of miscues is close to the actual percentage of their occurrence within the text.

TABLE 3

Grammatical Category of Miscues
for Individual Subjects

Subject	Noun	Verb	Adjective	Adverb	Function Word	Indeterminant	Total Miscues	Comprehension
	39	18	10	7	57	8		
32	.281	.130	.072	.050	.410	.058	139	27
	10	7	9	5	13	6		
34	.200	.140	.180	.100	.260	.120	50	30
	3	10	7	2	22	2		
35	.065	.217	.152	.044	.478	.044	46	34
	8	6	7	4	25	7		
37	.140	.105	.123	.070	.439	.123	57	27
	11	8	3	2	4	4		
39	.344	.250	.094	.063	.125	.125	32	26
	32	19	14	6	51	7		
40	.248	.147	.109	.047	.395	.054	129	22
	32	24	12	7	23	12		
41	.291	.218	.109	.064	.209	.109	110	15
	31	30	17	9	24	10		
42	.256	.248	.141	.074	.198	.083	121	25
	32	29	17	10	19	6		
54	.283	.257	.150	.089	.168	.053	113	23
	6	7	3	5	12	3		
55	.167	.194	.083	.139	.333	.083	36	32
	8	10	5	5	13	4		
57	.178	.222	.111	.111	.289	.089	36	36
	13	7	6	5	21	2		
64	.241	.130	.111	.093	.389	.037	54	32
% in Text	30	17	8	6	36	2		
Average %	23	19	12	8	31	8		

Miscues by Grammatical Function for Individual Subjects - When the miscues for each child are examined against the grammatical function of the E. R., three findings stand out. First, the patterns involving nouns, adjectives and indeterminate words remain the same for the individual children as they did for the group as a whole. That is, (1) the percentage of miscues involving nouns is consistently lower than the percentage of nouns in the text; (2) the percentage of miscues for adjectives is higher in 9 of 12 cases; and (3) in indeterminate words, it is consistently higher than the percentage of these words in the text. (See Table 3)

The percentages of miscues for individual children involving verbs, adverbs and function words are variable when compared against the percentage of these words occurring in the text. When the averages of these percentages are found, the average for verbs (18.92) and for adverbs (7.75), is slightly higher than the percentage of these words in the text. The average for function words (30.83) is lower than the percentage of these words occurring in the text. There is then a tendency for miscues involving verb and adverb functions to occur more frequently than their occurrence in the text would warrant, while the occurrence of miscues involving function words has a tendency to be lower than their occurrence in the text would warrant.

When each subject's total number of miscues, his percentage of miscues involving each grammatical function and his comprehension scores are all considered, the total picture is one of distinct individuality. For example, subjects #32 and #37 have identical comprehension scores, but their total number of miscues is 139 and 57, respectively. Twenty-eight percent of the miscues for subject #32 involve the noun function; for subject #37, this sub-category involves only fourteen percent. Within the sub-category of function words both subjects have a high percentage of miscues; forty-one percent for subject #32 and forty-four percent for subject #37. Again, for miscues involving verb functions, they are quite similar, but in comparing adjectives, adverbs and indeterminates, they show distinct differences. The same kind of comparisons can be made concerning the other subjects. It would seem that these subjects indicate individual reading traits which do not necessarily reflect in either their comprehension scores or in a count of their total number of miscues.

TABLE 4

Percentage of Miscues Involving Dialect

Subject	No	Yes	Idiosyncratic	Doubtful
Total	980 .876	90 .080	18 .016	31 .028
4th	720 .863	78 .094	16 .019	20 .024
5th	260 .912	12 .042	2 .007	11 .039

Dialect Involvement of Miscues - One very clear statistic stands out when examining the possible effects of dialect upon the occurrence of miscues. Dialect is involved in a very small percentage of the total number of miscues. For the group as a whole, 88% of the miscues (86% for the 4th graders, 91% for the 5th graders) are free of any dialect involvement. (See Table 4) Only 8% of the recorded miscues for the total group have a definite dialect influence (9% for the 4th graders, 4% for the 5th graders). The third sub-heading, speech idiosyncrasies, involves idiolect, speech patterns, inflection, morphemes which are unique to the speech of a particular individual, as well as any idiosyncrasies which might be caused by a speech impediment or hurried speech, etc. This category totals only 2% for the whole group.

The final sub-heading is a doubtful category into which has been placed any miscue where the possibility of dialect involvement exists. Less than 3% of the miscues, for the group as a whole, are involved.

For the whole group, all the miscues which include definite dialect involvement, doubtful dialect involvement and speech idiosyncrasies total only 13%.

The important and primary finding seems to be that for these average or good-average readers, dialect is not deeply involved in reading miscues.

TABLE 5

Percentage of Miscue Types

Subject	Substitution	Insertion	Omission	Reversal	Reversal w/ Sub., Insert. or Omit.	Substitution w/ Insert. or Omit.
	516	131	318	24	11	114
Total	.463	.118	.286	.022	.010	.102
	363	101	247	20	10	88
4th	.438	.122	.298	.024	.012	.106
	153	30	71	4	1	26
5th	.537	.105	.249	.014	.004	.091

Miscue Types - The order of occurrence of miscue type from most to least frequent was identical for the total group and the two sub-groups. The order of frequency ran from substitutions through omissions, insertions, insertions with omissions or substitutions, and reversals to reversals with substitutions, insertions, or omissions. (See Table 5)

The importance of the data offered here is simply the indication of the kinds of miscues which offer the reader the greatest difficulty. Substitutions (46%) and substitutions with insertions or omissions (10%) are the most common miscue type (56%). Omissions (29%), is second; and insertions (12%) is third.

Reversals total only 2% of the miscues, and reversals with substitutions, insertions or omissions are 1%. This means a total of only 3% of all miscues involve reversals. This is an interesting figure in light of the consistent attention which this reading difficulty has always received. Figures from this research would tend to indicate that reading reversals present a much more minor reading difficulty than has been generally assumed.

The data which becomes available when comparing miscue type and total miscues can take on added importance when it is held up against two other pieces of data: (a) percentage of miscue types for readers of different levels and abilities, and (b) a breakdown of each miscue type as they fall within other categories of the taxonomy (such as transformations, habitual association, etc.). For example,

omissions are the second most common miscues for the children involved within this research. The same statistic might be recorded for a group of beginning readers. Breaking this data down according to its occurrence in other miscue categories might reveal the added information that the young reader's omissions involve many omissions of whole words in situations where the word is not known, while a large percent of the omissions for more advanced readers could involve transformations or a greater use of skimming.

TABLE 6

Percentages of Miscue Types
for Individual Subjects

Subject	Substitution	Insertion	Omission	Reversal	Reversal w/ Sub., Insert. or Omit.	Substitution w/ Insert. or Omit.
32	80 .452	22 .124	47 .266	2 .011	3 .017	23 .130
34	35 .660	1 .019	14 .264	2 .038	0 .000	1 .019
35	28 .519	12 .222	10 .185	1 .019	0 .000	3 .056
37	19 .279	10 .147	30 .441	0 .000	3 .044	6 .088
39	16 .444	5 .139	10 .278	3 .083	1 .028	1 .028
40	60 .349	27 .157	56 .326	4 .023	2 .012	23 .134
41	68 .531	13 .102	31 .242	3 .023	0 .000	13 .102
42	57 .404	11 .078	49 .348	5 .036	1 .007	18 .128
54	78 .667	5 .043	17 .145	0 .000	1 .009	16 .137
55	24 .533	4 .089	9 .200	1 .022	0 .000	7 .156
57	16 .286	12 .214	24 .429	1 .018	0 .000	3 .054
64	35 .522	9 .134	21 .313	2 .030	0 .000	0 .000

Miscue Type for Individual Subjects - Another significant use of miscue type can be made in the examination and evaluation of individual reading differences. Table 6 provides the percentages of miscue types for each subject in the research. From this data, individual differences and possible clues to individual reading difficulties can begin to be examined. For subject #57, only 29% of the miscues are substitutions, while the average for the group is 46%. On the other hand, this subject has 43% of his miscues as omissions, while the group average is only 29%. Subject #37 shows a pattern similar to that of subject #57. Subjects #35 and #57 both show percentages of insertion miscues well above the group average of 12%. It would seem that percentages of miscue type may reflect, to a great extent, individual reading patterns and difficulties.

TABLE 7

Percentage of Miscues
Involving Phonemic Cues

Subject	Not Involved	Single Consonant	Single Vowel	Homophone	Allomorph	Full Vowel for Schwa	Two Vowel or Consonant Sequence
Total	692	83	145	0	36	10	27
	.697	.084	.146	.000	.036	.010	.027
4th	551	57	115	0	33	3	11
	.716	.074	.149	.000	.043	.004	.014
5th	141	26	30	0	3	7	16
	.632	.117	.135	.000	.014	.031	.072

Phonemic Involvement of Miscues - Fully 70% of the miscues for the group as a whole (72% for the 4th graders, 63% for the 5th graders) do not involve close phonemic relationships. Only a little more than one quarter of the miscues involve phonemic cues as measured by the taxonomy. (See Table 7)

In examining the 30% of miscues (for the total group) which are phonemically connected, the two largest groups involve single consonant and vowel differences. Examples of such miscues could involve the E. R. had with the O. R. bad, or the E. R. head with the O. R. hide. Single consonant differences are involved in 15% of the total miscues. Single vowel differences are involved in 8% of the total miscues.

Other phonemically related miscues include morphemic variants and allomorphs with 4% for the total group (4% for the 4th graders, 1% for the 5th graders). An example would involve an O. R. of punkin for an E. R. of pumpkin.

Vowel or consonant replacement with a two phoneme sequence in either the E. R. or the O. R. is involved in 3% of the miscues for the total group (1% for the 4th graders, 7% for the 5th graders). The E. R. could with an O. R. of should offers an example of this.

Full vowel substitutions for the schwa are involved in 1%

of the miscues for the total group (0.4% for the 4th graders, 3% for the 5th graders). An O. R. of a-way for the E. R. away is an example. In most cases, this miscue is also noted under #47 of the taxonomy. The substitution of a full vowel for a schwa occurs in some divergent dialects and also as a result of over corrections in reading procedures.

There was no instance of a miscue involving an O. R. and an E. R. that were homophones. Homophones are those words which are spelled differently, but which have the same pronunciation, such as bare and bear.

The next data examined, the involvement of graphic clues in miscues, should also be considered in connection with the phonemic category. There is an important difference between the graphic and phonemic categories in the taxonomy. The graphic category attempts to identify graphic relationships along a wide continuum. Included are close relationships with only one grapheme difference, and extended relationships where only general configuration is involved. The phonemic category, on the other hand, identifies only close phonemic relationships. The relationship between graphic and phonemic clues cannot be fully examined, but it can be noted that for both categories a substantial percentage of miscues are not involved (34% graphically, 70% phonemically). The figures seem to suggest that the readers within the research were making use of other reading cue systems.

TABLE 8

Percentage of Graphic Miscues

Subject	Not Involved	Single Grapheme	Similar Spelling	Key Elements	General Configuration	Non-word	Homograph	Splitting Syllables	Allograph
Total	331	244	144	165	26	53	7	18	0
	.335	.247	.146	.167	.026	.054	.007	.018	.000
4th	293	185	101	125	20	31	5	10	0
	.381	.240	.131	.162	.026	.040	.007	.013	.000
5th	38	59	43	40	6	22	2	8	0
	.174	.271	.197	.184	.028	.101	.009	.037	.000

Graphic Miscues - Graphic cues are not involved in 34% of the miscues for the total group (38% for 4th graders, 17% for 5th graders). (See Table 8) This means that, for the group as a whole, fully 66% of the miscues did involve some graphic information.

In examining the miscues which did involve graphic cues, it can be noted that the percentage of occurrences from highest to lowest is in the same rank order for the total group and the two sub-groups. Instances where the O. R. and the E. R. differ in a single grapheme, as an O. R. of bed for the E. R. bad, include 25% of the miscues of the total group, (24% for the 4th graders; 27% for the 5th graders). It is important to note that this category overlaps with the single vowel and consonant categories of the phonemic section of the taxonomy (49-1, 49-2). In other words, the above mentioned O. R. of bed in place of the E. R. bad would be marked both as a possible graphically related (45-1) and phonemically related (49-1) miscue, since it is impossible for the researcher to determine positively whether one or both were directly involved.

Similar spelling is involved in 15% of the miscues for the total group (13% for the 4th graders, 20% for the 5th graders). Examples include an O. R. of real for an E. R. of really, didn't for don't, and expression for impression.

Next in percentage of occurrence, with 17% for the total group, is the involvement of common key elements (16% for the 4th graders,

18% for the 5th graders). This category can include the substitution of the O. R. anybody for the E. R. everybody; also words with common initial consonants such as placed for pushed.

In 5% of the miscues for the total group (4% for the 4th graders, 10% for the 5th graders), the reader's O. R. is a non-word. (This is probably relatively high because of a characteristic of the story read.)

Next in order of occurrence are miscues involving general configuration clues. This category involves 3% of the miscues for the total group and for the two sub-groups. The substitution of I wonder in place of a wonderful is an example of a miscue in the category of general configuration.

Splitting syllables, such as responding to the E. R. little by saying lit-tle, is involved in 2% of the total miscues. Situations in which the O. R. and the E. R. were homographs, as in read (present tense) and read (past tense), are involved in only 1% of the total miscues.

One final category of graphic clues involves allographs or variations in print type for the same E. R., such as laugh and LAUGH. The reading material used in the research contained no situation in which this miscue could occur.

In reviewing the percentages of the different categories of graphically related miscues, it can be seen that there is a direct correlation between percentage of miscues and graphic similarity. That is, the highest percentage of miscues occurs in categories with high graphic similarity, while the lowest percentage of miscues falls into categories with least graphic similarity.

TABLE 9

Structural Category of Miscues

Subject	Sub Morpheme	Bound Morpheme	Free Morpheme	Phrase	Sentence
Total	216	111	679	87	27
	.193	.099	.606	.078	.024
4th	189	84	473	70	20
	.226	.101	.566	.084	.024
5th	27	27	206	17	7
	.095	.095	.725	.060	.025

Structural Level of Miscues - The percentage of miscues occurring at each grammatical level follows the same rank order for the total group and the two sub-groups.

The highest percentage of miscues with 61% for the total group (57% for the 4th graders, 73% for the 5th graders), occurred at the free morpheme level. (See Table 9) The free morpheme level can include the omission or insertion of a word or it can involve the substitution of one word for another. This can mean a total change, as with the E. R. cameras and the O. R. lights; or the change of one phoneme, as with the E. R. she and the O. R. he.

It is important to note, within this category, though the miscue is physically involving only one morpheme, the reader is often functioning at a phrase or sentence level. The simple omission of the word the from the E. R., I'm a very busy man, he said, hanging up the two telephones into which he'd been talking, results in a transformation.

The second most frequent category is sub-morphemic miscues, with 19% for the total group (23% for the 4th graders, 10% for the 5th graders). Two main difficulties are involved. In one case, the reader simply does not know the word and makes a faulty attempt at pronouncing it (inteknikl for intellectual); in other cases, dialect and idiolect are involved (tha's for that's, and dat for that).

Miscues involving bound morphemes constitute the next most frequent category, with 10% for the total group and the two sub-groups. Included here are the additions, omissions and substitutions

of suffixes, prefixes, compounds or syllables. Within this category, as with free morphemes, the miscue can be physically at the bound morpheme level, while actually functioning at the phrase or sentence level. The following sentence offers an example of both a physical change involving derivational endings, and a functional change involving a grammatical transformation.

E. R. I don't remember what Mr. Barney said during the televised program.

O. R. I don't remember what Mr. Barney said during the television program.

The fourth and fifth most frequent miscues are at the phrase level, with 8% for the total group, and the sentence level, with 2% for the total group. By definition, these miscues are operating at a level above that of free morphemes.

TABLE 10

Structural Category of
Miscues for Individual Subjects

Subject	Sub Morpheme	Bound Morpheme	Free Morpheme	Phrase	Sentence	Comprehension	% of Miscues Free and Above
32	35 .197	13 .073	101 .567	23 .129	6 .034	27	73
34	26 .491	1 .019	25 .472	1 .019	0 .000	30	49
35	8 .146	7 .127	36 .655	4 .073	0 .000	34	73
37	15 .221	4 .059	46 .677	3 .044	0 .000	27	72
39	13 .333	3 .077	20 .513	2 .051	1 .026	26	59
40	24 .139	10 .058	113 .653	20 .116	6 .035	22	81
41	29 .225	14 .109	78 .605	7 .054	1 .008	15	67
42	39 .277	32 .227	54 .383	10 .071	6 .043	25	49
54	11 .094	8 .068	94 .803	3 .026	1 .009	23	84
55	0 .000	0 .000	39 .867	4 .089	2 .044	32	100
57	10 .182	9 .164	31 .564	1 .018	4 .073	36	65
64	6 .090	10 .149	42 .627	9 .134	0 .000	32	76

Structural Level of Miscues for Individual Subjects - It seems worthwhile to examine the percentages of miscues at various levels for individual reader differences. (See Table 10) Reader #34 has his miscues divided almost evenly between the sub-morphemic and the free morpheme levels. Reader #57 has half of his miscues fall at the free morpheme level, while the other half are spread out over the remaining four levels. Reader #55 has no miscues at the sub-morphemic or bound morpheme levels.

If comprehension scores are added, the effects of individual performance are increased. Reader #55 has a high comprehension score and 100% of his miscues occur at or above the free morpheme level, while Reader #34 has high comprehension with only 49% of his miscues occurring at or above the free morpheme level. Readers #40 and #34 both have low comprehension, while 81% and 84% of their miscues occur at or above the free morpheme level. Reader #41 has low comprehension and has 67% of his miscues occurring at or above the free morpheme level. Miscue level is not an indicator of reading proficiency for these readers.

Conclusions About Miscues -

1. There is a slight tendency for an increase in MPHW to be accompanied by a decrease in comprehension score.

2. Proficiency variations in oral reading mode seem to have an effect upon the number of MPHW.

3. The percentage of miscue occurrence is affected by the grammatical function of the expected response (GFSTM):

   a. The percentage of occurrence for nouns is lower than their rate of appearance within the text.

   b. The percentage of occurrence for verbs, adverbs and function words is proportionate to their rate of appearance within the text.

   c. The percentage of occurrence for adjectives and indeterminants is higher than their rate of occurrence within the text.

   d. Examination of GFSTM, percentage of miscues and comprehension, indicates that individual subjects display distinct and widely varying patterns.

4. Deviant dialect is involved in a very low percentage of the total reading miscues.

5. Within the research, miscue types had widely differing rates of occurrence.

   a. The two types of substitution miscues account for 56% of the total miscues.

   b. The two types of reversal miscues account for only 3% of the total miscues.

   c. Examination of the percentage of occurrence of differing miscue types indicates that individual subjects display distinct and widely varying patterns.

6. Close phonemic relationships are involved in a low percentage of the total reading miscues.

   a. 30% of the miscues have possible phonemic involvement.

   b. Single consonant and vowel differences are the two largest groups of phonemic miscues.

7. Graphic miscues are involved in a high percentage of the total reading miscues.

   a. 66% of the miscues have possible graphic involvement.

b. Single grapheme difference, key elements and similar elements are the largest groups of graphic involvement.

8. Miscues at the free morpheme level account for 61% of the total number of miscues.

a. Individual children exhibit differing patterns of occurrence concerning levels of miscue, with the free morpheme level consistently high for all individuals.

b. Miscue level does not seem to be an accurate indicator of reading proficiency.

B. CORRECTIONS

Within the research, a correction attempt was marked each time a child repeated material orally. Such regressions can be for the purpose of changing intonation, words or phrases.

Corrections are a sub-group of the regression category, which will be discussed in the next section; and, in many ways, corrections offer another view of the same phenomena.

In examining corrections, we center our attention upon the reader's self-initiated attempts at handling his miscues. There is concern for how frequently the reader is able to identify his own miscues and upon how successful he is in correcting.

When examining the same phenomena from the point of view of regressions, the concern centers upon the number and kinds of regressions which are being made and their possible relationship to other reading phenomena.

TABLE 11

Percentage of Corrections
for Individual Subjects

Subject	No Correction	Correction	Unsuccessful Correction	Total Misses
	134	39	4	
32	.757	.220	.023	139
	31	18	4	
34	.585	.340	.076	50
	34	19	2	
35	.618	.346	.036	46
	49	18	1	
37	.721	.265	.015	57
	17	21	1	
39	.436	.539	.026	32
	135	34	5	
40	.776	.195	.029	129
	117	11	0	
41	.914	.086	.000	110
	125	12	4	
42	.887	.085	.028	121
	80	30	7	
54	.684	.256	.060	113
	17	28	0	
55	.378	.622	.000	36
	52	4	0	
57	.929	.071	.000	36
	46	21	0	
64	.687	.313	.000	54

Miscue Corrections - There is a very wide range in the percentage of corrections made by individual subjects, with a low of 7% and a high of 62%. (See Table 11)

As a total group (4th and 5th graders combined), the subjects have 1,120 miscues. No attempt was made to correct 75% of the miscues; 23% of the miscues were successfully corrected; and unsuccessful corrections comprised less than .03% of all miscues.

Our four 5th graders have a higher percentage of successful corrections (29%) than the 4th graders (21%). This is expected, since other things being equal, the 5th graders should have greater reading facility, should recognize more of their miscues and have more proficient use of reading skills available for correction.

These figures become more impressive if one considers the added effects of silent corrections, which, developmentally, may be higher for the 5th graders. This means that the 5th graders are making fewer miscues, thus having need for fewer regressions, and correcting a greater percent of their miscues.

The two subjects who are at the extremes in percentage of corrections - the highest with 62% corrections (Subject #55) and the lowest with 7% corrections (Subject #57) - have the two lowest numbers of miscues per 100 words (2.2 and 1.9, respectively). So subjects who are making the fewest miscues are, at one extreme, doing the most correcting, and at the other extreme, doing the least correcting. This points to distinct differences in reading modes for these two subjects.

In ranking the other ten subjects according to percentage of correction, it can be generally stated that an increase in miscues corresponds with a decrease in percentage of corrections. There is also a slight decrease in comprehension scores as the number of miscues increases.

It might appear that the subjects with the most miscues are those having the most reading difficulties. However, it must be remembered that all of the subjects in this study are reading either one (5th graders) or two (4th graders) years above grade level, and all of the comprehension scores, with the exception of one (#15) are in the medium or high range. Therefore, what variations are occurring are all centered within a relatively small range. The variation in range of actual number of miscues (low of 39, high of 177) is far greater than the variation in the comprehension scores. Within this relatively proficient group, the number of miscues alone cannot be used to predict comprehension.

TABLE 12

Percentage of Corrections
According to Grammatical Function

Grammatical Function	Total			4th			5th		
	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction
Noun	156 .693	63 .280	6 .027	118 .711	44 .265	4 .024	38 .644	19 .322	2 .034
Verb	118 .674	49 .280	8 .046	88 .721	29 .238	5 .041	30 .566	20 .377	3 .057
Adjective	74 .673	28 .255	8 .073	54 .684	19 .241	6 .076	20 .645	9 .290	2 .065
Adverb	49 .731	17 .254	1 .015	34 .810	7 .167	1 .024	15 .600	10 .400	0 .000
Function Word	215 .762	67 .238	0 .000	168 .774	49 .226	0 .000	47 .723	18 .277	0 .000
Indeterminate	67 .944	1 .014	3 .042	52 .929	1 .018	3 .054	15 1.00	0 .000	0 .000

Corrections By Grammatical Function - Twenty-eight percent of noun miscues were corrected; 28% of verbs; 26% of adjectives; 25% of adverbs; 24% of function words; and 1% of the indeterminants.* (See Table 12)

There is then, a small range in tendency to correct as determined by the grammatical function of the E. R. The highest tendency to correct occurs with nouns and verbs, with a declining tendency to correct in moving from adjectives through adverbs and function words. There is virtually no correction of indeterminant words.

It seems reasonable for function words to cause the lowest percentage of correction. They carry little semantic meaning; their major function is a structural one. A miscue involving a function word is going to cause less disruption of meaning than a miscue involving any other part of speech.

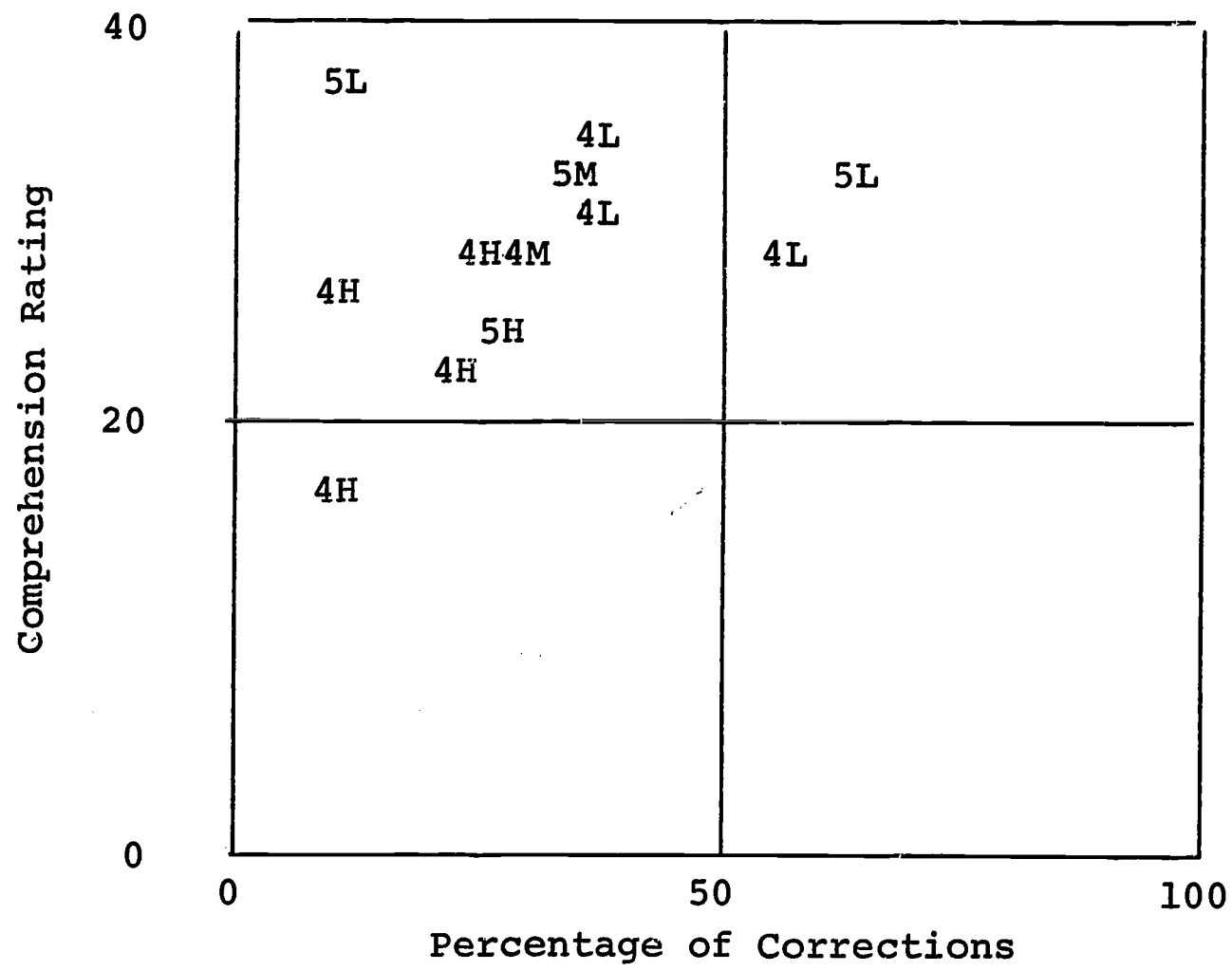
* Only those miscues where such classification is appropriate are discussed here.

The fact that indeterminate words (a grammatical function cannot be determined for the word) are so seldom corrected, strongly indicates that the reader is definitely hindered in his attack on the word by the lack of structural clues.

In breaking the figures down according to grade level, the same basic relationship exists with the groups, with the exception of the percentage of corrections for adverbs. The 5th graders corrected 40% of their miscues involving adverbs, while the 4th graders corrected only 17% of these miscues.

FIGURE 1

Plot of Comprehension Ratings
and Percentage of Corrections



Corrections and Comprehension Ratings - In comparing comprehension ratings to the percentage of corrections, the subjects divide into two distinct groups separated by a marked gap. One group of subjects with low number of miscues (39-68) and the other group of subjects with high number of miscues (117-179). (See Figure 1)

Within the low miscue group, a high number of corrections is associated with a low comprehension score. Perhaps for readers who are already making few miscues, there is a preoccupation with oral corrections which detracts them from the more important task of comprehending.

Within the high miscue group, the trend is reversed, and a high number of corrections is associated with a higher comprehension score. In this case, the miscues are frequent enough to become confusing, and the reader is forced to do more correcting in order to gain meaning. Again, there appears to be evidence of different modes of reading. One group is relatively smooth in oral reading, with high comprehension accompanying smooth, errorless oral reading. The others are clumsy oral readers whose minds race ahead of their tongues, leading to miscues and resulting corrections.

TABLE 13

Percentage of Correction
By Miscue Type

Type	Total			4th			5th		
	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction
Substitution	374 .725	124 .240	18 .035	275 .758	77 .212	11 .030	99 .647	47 .307	7 .046
Insertion	109 .832	22 .168	0 .000	84 .832	17 .168	0 .000	25 .833	5 .167	0 .000
Omission	245 .775	67 .212	4 .013	192 .784	49 .200	4 .016	53 .747	18 .254	0 .000
Reversal	16 .667	6 .250	2 .083	13 .650	5 .250	2 .100	3 .750	1 .250	0 .000
Reversal w/sub., insert., omit.	8 .727	2 .182	1 .091	7 .700	2 .200	1 .100	1 1.00	0 .000	0 .000
Substitution w/ insert., omit.	78 .684	33 .290	3 .026	64 .727	21 .239	3 .034	14 .539	12 .462	0 .000

Corrections and Miscue Type - Miscue types can be divided into two categories according to their frequency of occurrence, with substitutions, insertions, and omissions occurring with high frequency; and reversals, reversals with substitutions, insertions or omissions, occurring with low frequency. (See Table 13)

Of the high frequency miscue types, the most corrections occur for substitutions. Of the low frequency miscue types, the most corrections occur for substitutions with insertions or omissions. Substitutions tend to be graphically related to the E. R. so that the E. R. advertise can have an O. R. advise, or the E. R. he can have the O. R. she. In such instances, there can be a complete meaning change, and thus, a greater tendency to correct.

Of the high frequency miscue types, the least corrections occur for insertions. Insertions are at the free morpheme level 63% of the time. There is a tendency for insertions at the free morpheme level to be closely tied to story content and this miscue type apparently gave less cause for correction.

TABLE 14

Percentage of Corrections
By Miscue Level

Level	Total			4th			5th		
	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction
Sub Morpheme	183 .851	18 .084	14 .065	157 .835	17 .090	14 .075	26 .963	1 .037	0 .000
Bound Morpheme	98 .883	12 .108	1 .009	74 .881	9 .107	1 .012	24 .889	3 .111	0 .000
Free Morpheme	464 .684	204 .301	10 .015	338 .716	131 .278	3 .006	126 .612	73 .354	7 .034
Phrase	68 .782	17 .195	2 .023	55 .786	13 .186	2 .029	13 .765	4 .235	0 .000
Sentence	23 .852	4 .148	0 .000	18 .900	2 .100	0 .000	5 .714	2 .286	0 .000

Corrections and Miscue Level - In looking at the percentage of corrections at each level of the miscue, a general trend emerges which is consistent for the group as a whole and for both the 4th and 5th grade sub-groups. The lowest percentages of corrections occur at the sub morphemic level; there is a slight increase at the bound morphemic level; and a peak is reached at the morphemic level. (See Table 14) There is then a slight drop in percentage for the phrase and sentence levels. Out of 255 successful corrections 225 of them occur at the free morpheme, phrase and sentence levels. Only 30 corrections occur at the sub morphemic or bound morpheme levels. This means that at the morpheme level and above, the subjects were correcting 28% of their miscues, while at the sub morphemic and bound morpheme levels, they were correcting only 9%.

Obviously, for purposes of correction, the morphemic, phrase and sentence level miscues are much more important than the sub morphemic and the bound morphemic level miscues.

These results may provide a strong indication of the most profitable attack levels for readers. Traditionally, much emphasis has been placed on phoneme-grapheme relationships, and list word recognition. The results of this study indicate that much of this emphasis may be wasted. The more successful attack is taking place at much higher levels. From the word through the sentence level, structural and semantic clues are available to the reader and provide a much broader basis for reading attack.

One suggestion for reading instruction would be the introduction of whole sentences and phrases in place of list words. Another would be a shift of emphasis to the use of structural and semantic clues in teaching word attack.

The research data also reveals the possibility of a developmental trend. For the 5th graders, the percentage of corrections at the phrase and sentence level is greater than that of the 4th graders. Also there is a shift in relative importance from phrase level correction as the second most important category for the 4th graders to sentence level correction as the category of second importance for the 5th graders. The shift here is toward even higher levels of attack.

TABLE 15

Percentage of Corrections Involving Graphemic Cues

Graphemic	Total			4th			5th		
	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction
Not Involved	234 .707	92 .278	5 .015	214 .730	75 .256	4 .014	20 .526	17 .447	1 .026
Single Grapheme	177 .728	59 .243	7 .029	141 .766	39 .212	4 .022	36 .610	20 .339	3 .051
Similar Spelling	116 .806	21 .146	7 .049	84 .832	12 .119	5 .050	32 .744	9 .209	2 .047
Key Element	121 .733	42 .255	2 .012	97 .776	26 .208	2 .016	24 .600	16 .400	0 .000
General Configuration	17 .654	7 .269	2 .077	13 .650	5 .250	2 .100	4 .667	2 .333	0 .000
Non-word	44 .830	4 .076	5 .094	25 .807	2 .065	4 .129	19 .864	2 .091	1 .046
Homograph	4 .571	3 .429	0 .000	3 .600	2 .400	0 .000	1 .500	1 .500	0 .000
Splitting Syllables	18 1.00	0 .000	0 .000	10 1.00	0 .000	0 .000	8 1.00	0 .000	0 .000
Allograph	0	0	0	0	0	0	0	0	0

Corrections and Graphemic Cues - In all cases, the 5th graders are correcting successfully a higher percentage of their graphemically related miscues than are the 4th graders. (See Table 15)

Within the miscues that are graphemic, the highest percentage of correction occurs for homographs (it should be noted, however, that this group comprises the smallest number of actual miscues). An interesting consideration here is that homographs, by their very nature, involve use of context and/or structural clues for correction, while

the correction of other graphic miscues may possibly involve only phoneme-grapheme relationships. A reader who has decoded read (present tense) for read (past tense) has no available clue at the morphemic or sub morphemic level to indicate that a miscue has occurred. The clue must come at the structural and semantic levels. These results, indicating that word attack which involves the structural and semantic levels is most successful, reaffirm the results of the comparison between level and corrections.

In examining the figures for the other graphemically related miscues, the smallest percentage of corrections per miscue occur in the sounding of non-words. Because of the nature of the reading material used in the study, the results in this category cannot be considered representative. The material read for the study contains dictionary definitions. For example, the second paragraph of the story contains the sentence, Philosophical: showing calmness and courage in the face of ill fortune. The fourth paragraph contains the sentence, Philosophical! I shouted. Go ahead and cry! In these unusual cases, almost all syntactic and semantic clues are lacking and there must be total reliance on graphemic-phonemic relationship.

These figures would not accurately indicate the usual percentage of corrections involved in non-word miscues. They do, however, present the other facet of the findings regarding comparison involving percentage of corrections and level of miscue.

That is, there is a much lower percentage of successful correction per miscue when semantic and syntactic clues are missing.

Of the remaining graphemic categories, there is a slight tendency for those miscues with fewer points of graphic similarity (key elements and configuration cues) to be corrected more frequently. Behind this might be the fact that there was actually less E. R. for the miscue originally.

The graphic category involving the splitting of syllables shows no correction at all, although 18 miscues occur within the category. The important point to be noted here is that this is the only graphic category (with the possible exception of allographs) which involves no meaning change. An O. R. of lit-tle for the E. R. little has no effect upon syntax or meaning, and therefore, will invoke few corrections.

FIGURE 2

Example of The Area Covered In
Close And Extended Peripheral Field

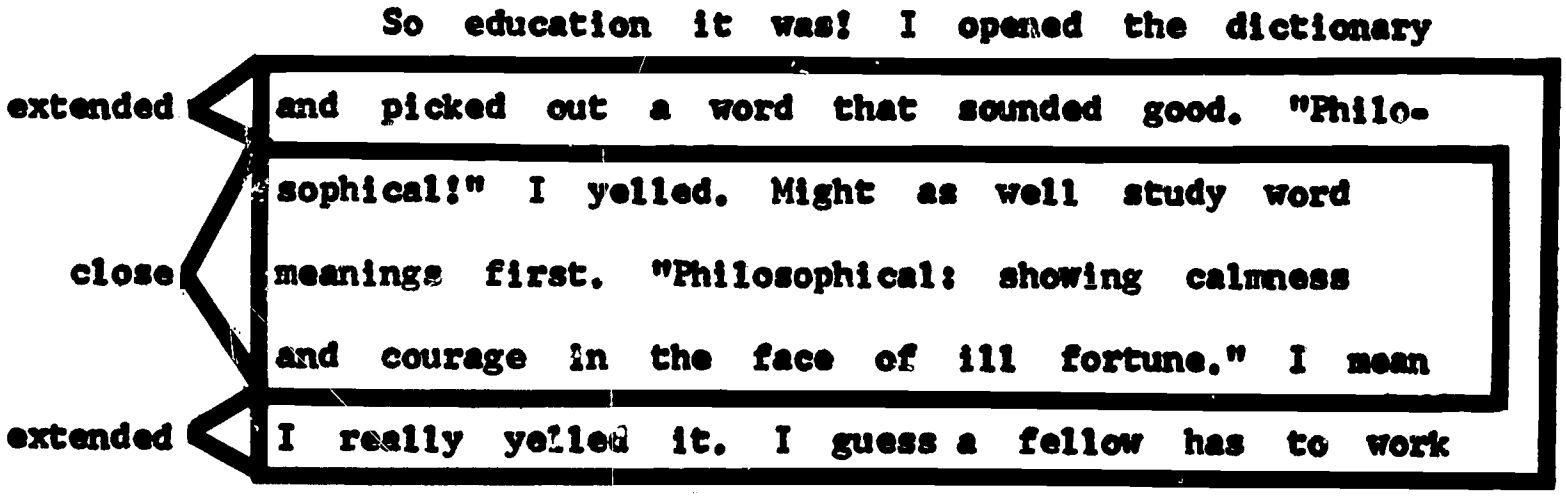


TABLE 16

Percentage of Corrections
Involving Cues In The Peripheral Field

	Total			4th			5th		
Field	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction
Not Involved	671 .772	170 .196	28 .032	532 .799	113 .170	21 .032	139 .685	57 .281	7 .035
Close	64 .557	51 .444	0 .000	51 .548	42 .452	0 .000	13 .591	9 .409	0 .000
Extended	18 .692	8 .308	0 .000	17 .708	7 .292	0 .000	1 .500	1 .500	0 .000

Corrections and Peripheral Field - If an O. R. involved in a miscue is found either two lines above or below the line in which the miscue occurred, it is marked as being in the visual periphery of the reader. One line above or below is considered close periphery; two lines are considered extended periphery. (See Figure 2)

The concepts involved in the effects of the E. R. in the reader's peripheral vision are closely tied to the researcher's view of the reading process. To accept the fact that peripheral E. R.s can affect reading, is to accept the view that reading, at least for the proficient reader, is not a precise, word by word attack. (It should be remembered that all of the subjects involved in the study are relatively proficient readers.)

In the researcher's view, the reading process involves much use of minimal visual clues. The reader actually takes in whole chunks or segments of the written E. R., moving in jumps of differing lengths across the page. The symbols involved in each of these visual segments are processed to varying degrees according to the reader's needs. For example, upon decoding the word happy and seeing the letter b in the periphery, the reader might not wait for more visual cues before giving the O. R., Happy Birthday.

The occurrence of regressions can be viewed as resulting from the use of minimal visual clues which did not produce a satisfactory guess. In this instance, the reader goes back and corrects when

additional information suggests that his decoding process has been faulty.

It can also be argued that it would be a perceptual impossibility to block out entirely one's peripheral vision. Readers might be able to focus upon specific E. R.s, but the printed symbols surrounding that focus are still within the perceptual field and thus in a position to affect the sampling in the reading process.

The results of the data concerning the presence of E. R.s in the reader's visual periphery strongly support this view of the reading process.

The total group and both sub-groups showed a substantial increase in percentage of miscues corrected when the cue for actual O. R. was in the visual periphery. (See Table 16)

The highest percentage of correction occurred when the cue was in the close periphery; the lowest percentage of correction occurred when there was no cue in the periphery; and falling between these two was the percentage of correction when there was a cue in the extended periphery.

It would seem that even though a stimulus in the visual periphery might act as a partial cause for a miscue, this kind of miscue is often corrected because it tends to lead the reader to unacceptable responses.

TABLE 17

Percentage of Corrections
Involving Dialect

Dialect	Total			4th			5th		
	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction
Not Involved	707 .722	245 .250	27 .028	534 .743	165 .230	20 .028	173 .665	80 .308	7 .027
Involved	85 .955	3 .034	1 .011	74 .961	2 .026	1 .013	11 .917	1 .083	0 .000
Speech Idiosyncrasy	15 .833	3 .167	0 .000	13 .813	3 .188	0 .000	2 1.00	0 .000	0 .000
Doubtful	27 .871	4 .129	0 .000	18 .900	2 .100	0 .000	9 .818	2 .182	0 .000

Corrections and Dialect - In examining the percentage of correction which occur when a miscue involves dialect the negative view is the most interesting and rewarding. Within this entire section: (1) miscues involving dialect, (2) miscues involving speech idiosyncrasy and, (9) miscues which are probably dialect based but doubtful, there is a very low percentage of correction attempts. (See Table 17)

It seems a strong indication that this may be generalized to other readers; where a miscue involves a dialect or idiosyncratic speech pattern, there will be a very low percentage of correction.

The low correction rate on dialect based miscues is closely tied to the minimal effects which these miscues have upon the semantic and syntactic acceptability of the material, and to the fact that these changes are made toward what is acceptable in the reader's grammar. The miscues tend to put the material in a form which sounds more satisfying to the reader's dialect.

An interesting hypothesis to consider would be that as a reader with a deviant dialect gains proficiency, the number of dialect related miscues will increase. The assumption here being that with added comfort and less emphasis on the individual symbols involved, an actual translation process will begin to emerge in which the dialect of the material is translated into the dialect of the reader. A longitudinal study would be needed to affirm this hypothesis.

TABLE 18

Percentages of Corrections Involving Semantic Acceptability

Semantic Acceptability	Total			4th			5th		
	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction
Not Acceptable	102 .626	46 .282	15 .092	74 .644	29 .252	12 .104	28 .583	17 .354	3 .063
With Prior	84 .475	93 .525	0 .000	71 .526	64 .474	0 .000	13 .310	29 .691	0 .000
With Following	8 .667	3 .250	1 .083	7 .875	1 .125	0 .000	1 .250	2 .500	1 .250
In Sentence	58 .707	24 .293	0 .000	43 .717	17 .283	0 .000	15 .682	7 .318	0 .000
In Passage	581 .852	89 .131	12 .018	444 .864	61 .119	9 .018	137 .816	28 .167	3 .018

Corrections and Semantic Acceptability - One strong conviction of the researcher, prior to the study, was that there should be a very low tendency for readers to correct miscues which result in semantically acceptable patterns. This belief has been well affirmed by the data.

The total group corrected only 13% of the miscues which were totally semantically acceptable, with the 4th and 5th grade subgroups correcting 12% and 17%, respectively. It would seem that children are satisfied when the results are semantically acceptable within the material which they are reading. (See Table 18)

Semantic subcategory, With Prior, involves miscues resulting in sentence patterns which are acceptable only through the point of the miscue. A sentence read, Andrew stopped crying and tried to take hold of the dictionary. One of the subjects omitted the word take, reading, Andrew stopped crying and tried to hold.... At this point, she went back and corrected the miscue. Up to this point, her response is perfectly acceptable both semantically and syntactically. It is the fact that the next word in the sentence is of that creates the

necessity for revision.

This subcategory has the highest percentage of correction. Within the semantic category, the 5th graders correct this type of miscue 69% of the time; the 4th graders correct 47% of the time, with the average for the total group being 53%. It seems that miscues that involve the reader in semantic confusion in the middle of a grammatical structure are the most likely to be corrected.

Miscues that result in patterns which are acceptable only after the miscue, have the lowest percentage of corrections, with the exception of the semantic subcategory, In Passage (miscues which result in totally acceptable semantic patterns). There are several possible reasons for this. First, when the material is acceptable with what came prior, the reader has the advantage of all the past cues from the story, and the correction can be made immediately following the miscue. A second possibility could involve laterality. The data suggests that the left hand text is the most important to the readers who were involved in the study. Yet, a third influencing factor can be felt in the fact that in this kind of miscue the reader ends with a portion of semantically acceptable material even though there was a confusion earlier in the structure. The fact that the immediate material is acceptable, means that there is not as much pressure upon the reader to go back and correct.

TABLE 19

Percentages of Corrections Involving Syntactic Acceptability

Syntactic Acceptability	Total			4th			5th		
	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction
Not Acceptable	24 .522	21 .457	1 .022	13 .464	14 .500	1 .036	11 .611	7 .389	0 .000
With Prior	60 .484	64 .516	0 .000	53 .541	45 .459	0 .000	7 .269	19 .731	0 .000
With Following	6 .667	2 .222	1 .111	5 .833	1 .167	0 .000	1 .333	1 .333	1 .333
In Sentence	7 .500	7 .500	0 .000	6 .600	4 .400	0 .000	1 .250	3 .750	0 .000
In Passage	738 .798	161 .174	26 .028	563 .815	108 .156	20 .029	175 .748	53 .227	6 .026

Corrections and Syntactic Acceptability - In looking at the percentage of miscues which are corrected when syntactic structure is involved, it can be seen that the same trends exist here as existed for the semantically acceptable categories. The group as a whole, corrected only 17% of the miscues that resulted in syntactically acceptable structures (the 4th graders corrected 16% of the time, and the 5th graders corrected 23% of the time).

Again, of the subcategories, With Prior, patterns which are syntactically acceptable only prior to the miscue, results in the highest percentage of corrections. The same factors, prior cues, laterality and the immediate effects of the miscue, can be repeated here as were suggested for the like subcategory under Semantic Acceptability.

However, there is one tremendously important difference between the categories of Semantic Acceptability and Syntactic Acceptability. This difference revolves around the consistently higher percentage of corrections for all subcategories of Syntactic Acceptability as compared to the like divisions under Semantic Acceptability. A

reader is more likely to correct a miscue that results in a totally or partially unacceptable syntactic structure than one which results in a totally or partially unacceptable semantic structure. This fact points to the idea that these readers have an intuitive grasp of grammatical structure which underlies the reading process and further, that their seeking of the structural pattern is more basic to their reading than is the semantic element. Syntax is possible without meaning, but meaning is not possible without syntax.

TABLE 20

Percentages of Corrections Involving Intonational Acceptability

Intonation Acceptability	Total			4th			5th		
	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction
Not Acceptable	7 .304	14 .609	2 .087	4 .235	11 .647	2 .118	3 .500	3 .500	0 .000
Acceptable	782 .784	189 .190	26 .026	593 .807	123 .167	19 .026	189 .721	66 .252	7 .027
With Prior	42 .452	51 .548	0 .000	39 .507	38 .494	0 .000	3 .188	13 .813	0 .000
With Following	2 1.00	0 .000	0 .000	2 1.00	0 .000	0 .000	0 .	0	0

Corrections and Intonational Acceptability - In considering the corrections as they were related to intonation, the important fact to note is that they reflect the same general pattern that occurred with Syntactic and Semantic Acceptability. When the miscue involved a totally acceptable intonation pattern, only 19% of the miscues were corrected for the group as a whole, with the fourth graders correcting 17% of the time, and the 5th graders correcting 25% of the time. The highest percentage of correction occurs when intonation is totally unacceptable, with the total group at 61%. Intonation which is acceptable only prior to the miscue is the next highest category, with 55% of the miscues corrected.

TABLE 21

Percentage of Corrections Involving Semantic Change

Semantic Change	Total			4th			5th		
	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction
No Change	486 .857	74 .131	7 .012	390 .861	56 .124	7 .016	96 .842	18 .158	[illegible] .000
Change	344 .631	181 .332	20 .037	246 .656	116 .309	13 .035	98 .577	65 .382	7 .041
Doubtful	4 .800	0 .000	1 .200	3 .750	0 .000	1 .250	1 1.00	0 .000	0 .000

TABLE 22

Percentage of Corrections Involving Syntactic Change

Syntactic Change	Total			4th			5th		
	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction	No Correction	Correction	Unsuccessful Correction
No Change	425 .746	123 .216	22 .039	322 .778	74 .179	18 .044	103 .660	49 .314	4 .026
Change	408 .749	131 .240	6 .011	317 .758	98 .234	3 .007	91 .717	33 .260	3 .024
Doubtful	1 .500	1 .500	0 .000	0	0	0	1 .500	1 .500	0 .000

Corrections with Semantic and Syntactic Change - When a miscue results in semantic change, the percentage of correction for the total group is 33%, while the percentage of correction for miscues resulting in no meaning change is 13%. (See Table 21) There tends then, to be an increase in correction when a miscue results in meaning change.

When a miscue results in syntactic change, the percentage of correction for the total group is 24%, while the percentage of correction for miscues resulting in no syntactic change is 22%. (See Table 22) It seems that there is little tendency to correct when a miscue results in syntactic change. A possible factor involved here is the fact that syntactic change is less likely to lead to partially or totally unacceptable syntax, while semantic change is more apt to lead to totally or partially unacceptable meaning.

There is a sub-group difference apparent for both semantic and syntactic change categories. Within all the categories there is a tendency for the 5th graders to do more correcting than the 4th graders.

TABLE 23

Total Number of
Corrections and Miscues

No Correction	837
Correction	255
Unsuccessful Correction	28
Total Miscues	1120

Unsuccessful Corrections - One last area to consider involves those attempts at correction which were not successful. Of 1,120 total miscues, there were 283 correction attempts. Out of these 283 attempts, 255 were successful corrections, and only 28 were unsuccessful. For the subjects in the study, this means that 90% of their correction attempts were successful.

We can conclude then, that for the proficient reader, there is a well developed correction strategy, and attempts at correction of miscues will be highly successful.

Conclusions About Corrections -

1. The percentages of miscue corrections reflect both individual differences and group trends.

   a. As a group, the 5th graders had a higher percentage of successful corrections than did the 4th graders.

   b. There is no correlation between percentage of corrections and number of miscues for subjects at the two extremes of the ranked order.

   c. Within the middle range of the array, an increase in number of miscues is usually associated with a decrease in percentage of correction.

2. Corrections according to grammatical function:

   a. There is a small range in tendency to correct, from 28% to 24%, for nouns, verbs, adjectives, adverbs and function words.

   b. There is virtually no correction for indeterminate words.

3. A relationship exists between comprehension ratings, percentage of corrections, and number of miscues.

   a. For subjects with a low number of miscues, a high number of corrections is usually associated with a low comprehension score.

   b. For subjects with a high number of miscues, a high percentage of corrections is usually associated with a high comprehension score.

   c. Nevertheless, within a range of normally proficient reading ability, neither the number of reading miscues nor the percentage of correction can predict comprehension.

4. The percentage of correction is affected by miscue type.

   a. Substitutions and substitutions with insertions and omissions show the highest percentage of correction, (53%).

   b. Insertions show the lowest percentage of correction, (17%).

5. The percentage of correction is affected by the miscue level.

   a. The sub-morphemic and bound morpheme levels have low percentages of correction.

   b. The morphemic, phrase, and sentence levels have high percentages of correction.

c. The 5th grade readers show an increase in percentage of corrections over the 4th grade readers from the free morpheme level through the sentence level.

6. The percentage of correction is affected by graphemic involvement.

   a. The 5th grade readers show a higher percentage of correction over the 4th grade readers for all sections of the graphemic category.

   b. A higher percentage of correction occurs for graphemic categories which are tied to contextual and structural clues.

   c. There is a slight tendency in favor of correction for those grapheme categories with less graphic similarity.

7. Miscues which involve a perceptual stimulus in the periphery have a higher percentage of correction than those that don't, and the percentage of correction increases as the stimulus moves from extended periphery to close periphery.

8. There is a negligible percentage of correction attempts for miscues involving dialect and idiosyncratic speech patterns.

9. The percentage of correction is affected by semantic acceptability.

   a. A very low percentage of miscues which are totally semantically acceptable are corrected.

   b. The highest percentage of correction occurs when the miscue is acceptable only with prior meaning.

   c. A little more than one-fourth of the miscues which are totally unacceptable are corrected.

10. The percentage of correction is affected by syntactic acceptability.

   a. A very low percentage of miscues which are totally syntactically acceptable are corrected.

   b. The highest percentage of correction occurs when the miscue is acceptable only with prior syntax.

   c. There is a consistently higher percentage of correction for each of the syntactic categories than for the corresponding semantic categories.

11. The percentage of correction is affected by intonational acceptability.

   a. A very low percentage of miscues which are totally intonationally acceptable are corrected.

b. The highest percentage of correction occurs when the miscue is totally unacceptable.

12. There is an increase in percentage of corrections for miscues resulting in semantic change as compared with those that do not.

13. There is little tendency to correct when a miscue results in syntactic change.

14. Correction attempts are highly successful; 90% of them resulting in successful corrections.

C. REGRESSIONS

In oral reading, a reader will often repeat a word or phrase. The researcher has termed this phenomenon a regression. Most standardized reading tests treat regressions as reading errors (example: see Spache, 1964). The findings of this research tend to refute such a view. The research indicates that regressions actually function as part of a self-correction process for the reader. They may be responses to a miscue, but not miscues in and of themselves.

For example, an E. R. was read, I opened the dictionary and picked out a word that sounded good. The child read, I hoped - opened the dictionary and picked out a word that sounded good. The miscue involved responding with hoped in place of the E. R. opened. It was the child's recognition of the miscue situation which necessitated the regression.

Reading regressions were placed into four categories: word, phrase, correctional and intonational. Each regression will fall into two of these categories. The example above is a word - correctional regression. Other possible combinations include word - intonational, phrase - correctional, and phrase - intonational. Following are examples of these possible regression types.

Word - intonational: The E. R., He leaned over the crib and wagged a finger at my little brother. The O. R., He leaned over the crib▼ crib▶ and wagged a finger at my little brother. The regression in this case was to correct a terminal intonation pattern when the reader discovered that the sentence contained a compound verb phrase.

Phrase - correctional: The E. R., He placed a hand on my shoulder. The O. R., He paced, - he placed, - a hand on my shoulder. Upon seeing hand, the child appeared to recognize his miscue involving placed. In going back to correct, he started at the beginning of the sentence, in order to pick up the full meaning, instead of repeating only the word.

Phrase - intonational: The E. R., Mr. Barnaby straightened up, still holding the finger over the crib. The O. R., Mr. Barnaby straightened up - straightened up, still holding the finger over the crib. In this case, it appears that the verb-particle structure of straightened up created a situation in which a phrase regression was needed to change the relative intonation of the two words.

TABLE 24

Occurrence of Regression Types
for Individual Subjects

Grade	Subject	Word Regression	Phrase Regression	Correctional Regression	Intonational Regression	Regressions Per 100 Words
4th	32	53	34	69	18	4.2
	34	37	31	44	24	3.3
	35	58	25	31	52	4.0
	37	24	13	27	10	1.8
	39	25	31	33	23	2.7
	40	47	24	52	19	3.5
	41	12	6	13	5	0.9
	42	65	29	49	45	4.6
5th	54	68	31	59	40	4.8
	55	19	25	29	15	2.1
	57	16	6	6	16	1.1
	64	21	22	26	17	2.1

Regression Occurence - The results of the research show that the average number of regressions for the 4th graders is slightly greater than that for the 5th graders. (See Table 24) The 4th graders averaged 64-5/8 regressions on the reading, while the 5th graders averaged 52 regressions.

The 4th graders averaged 40-1/8 word regressions and 24-4/8 phrase regressions on the reading; the 5th graders averaged 31 word regressions and 21 phrase regressions. For both groups, word regressions were the most frequent. Three of the twelve subjects had more phrase regressions than word regressions. Of these three subjects, two were 5th graders. One existing possibility is the emergence of a developmental trend toward a higher frequency of phrase level regressions in relation to word level regressions for the 5th graders. A much larger universe would be needed to substantiate this hypothesis.

Another phenomenon which must be considered in examining total number of regressions is the existence of silent regressions. There were many instances of a reading pause following a miscue during which the subject may have re-scanned preceding material before continuing to read. In these cases the subject's behavior was identical to the behavior involved in oral regressions, except that the subject did not produce an oral correction. The researcher hypothesizes that the reader made a silent correction of the miscue before continuing. It is further suggested that this phenomenon is tied to proficiency in

reading mode; so that a highly proficient silent reader who is awkward in the oral reading mode, should produce more regressions than a reader of equal ability who is proficient in oral reading.

Further, as a reader increases his use of silent reading in proportion to his use of oral reading (as occurs through the grades with the drop of oral reading in formal reading programs), there should be a corresponding increase in the use of silent regressions.

It should be remembered, in examining the data on regressions, that for this research, no attempt was made to record silent regressions.

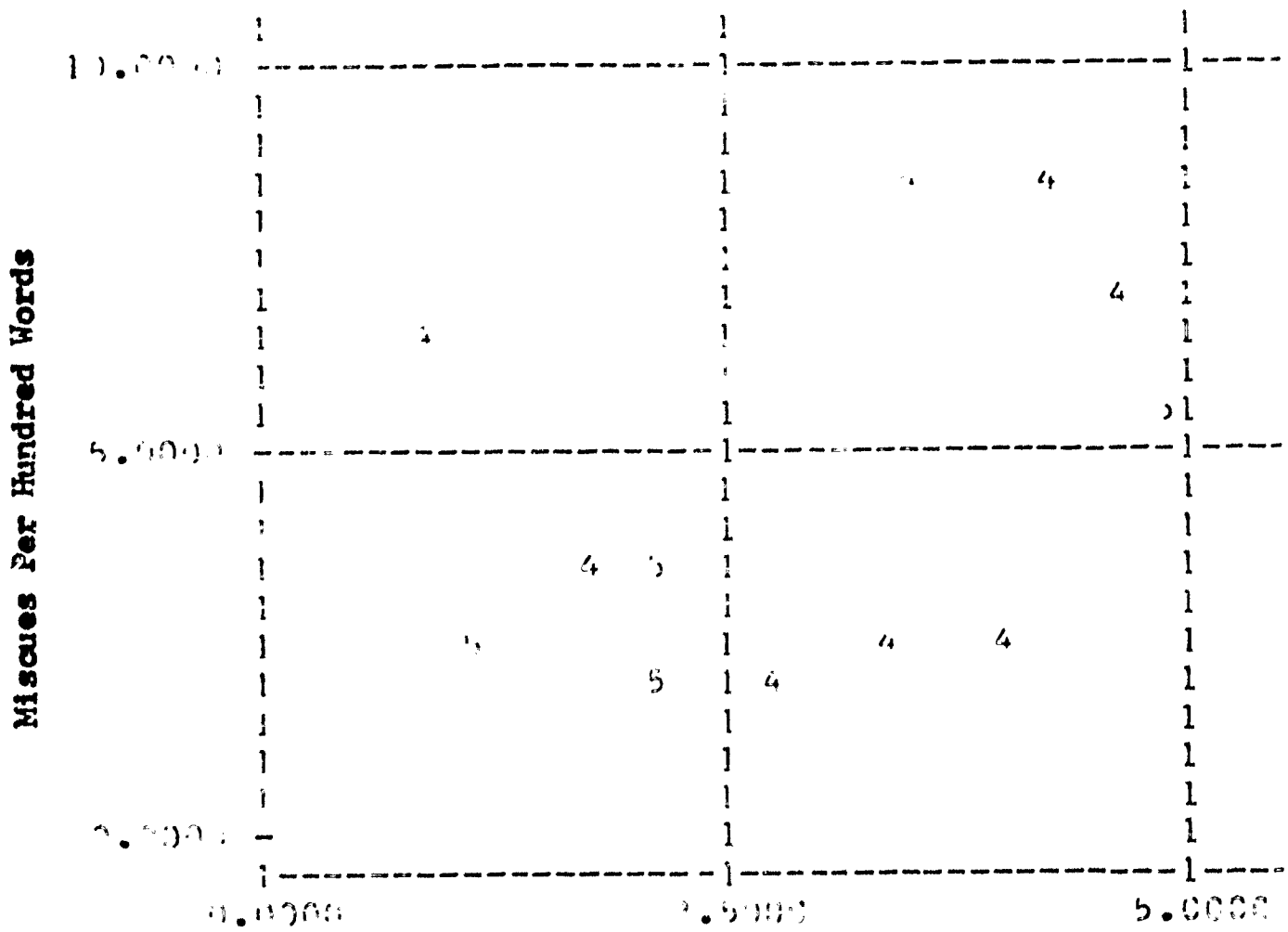
In examining intonational regressions as compared to correctional regressions for the 4th and 5th grade subjects, the data shows that, with the exception of one 4th and one 5th grader, there were more correctional regressions than intonational regressions for each subject.

It is interesting to note that the two subjects who are exceptions (who have more intonational regressions than correctional regressions), are also the two who scored highest on the comprehension rating (#36 for the 5th grader; #34 for the 4th grader). A second point of similarity for the two consists in the amount of reading which they do outside of school. Both children are consistently heavy users of the public library, and have established patterns of both oral and silent reading in the home.

The total regressions per hundred words ranged from a low of 0.8772 to a high of 4.8246. The highest percentage of regressions per hundred words was made by a 5th grader, the lowest by a 4th grader. In both cases, these children are not typical of their group. The average number of miscues per hundred words was 2.55 for the 5th graders and 3.12 for the 4th graders. There is a relationship between regressions per hundred words and miscues per hundred words. The miscues per hundred words range from a low of 1.9006 to a high of 8.7232. The range corresponds to, but is wider than, the range for the regressions.

FIGURE 3

Plot of Regressions Per Hundred Words
and MPHW for Individual Subjects



Regressions and MPHW - In plotting miscues per hundred words with regressions, the result is curvilinear with two extremes - low number of regressions with high number of miscues, and high number of regressions with high numbers of miscues. (See Figure 3) At the bottom of the curve, there is a concentration and within medium ranges, an increase in regressions is directly related to an increase in miscues.

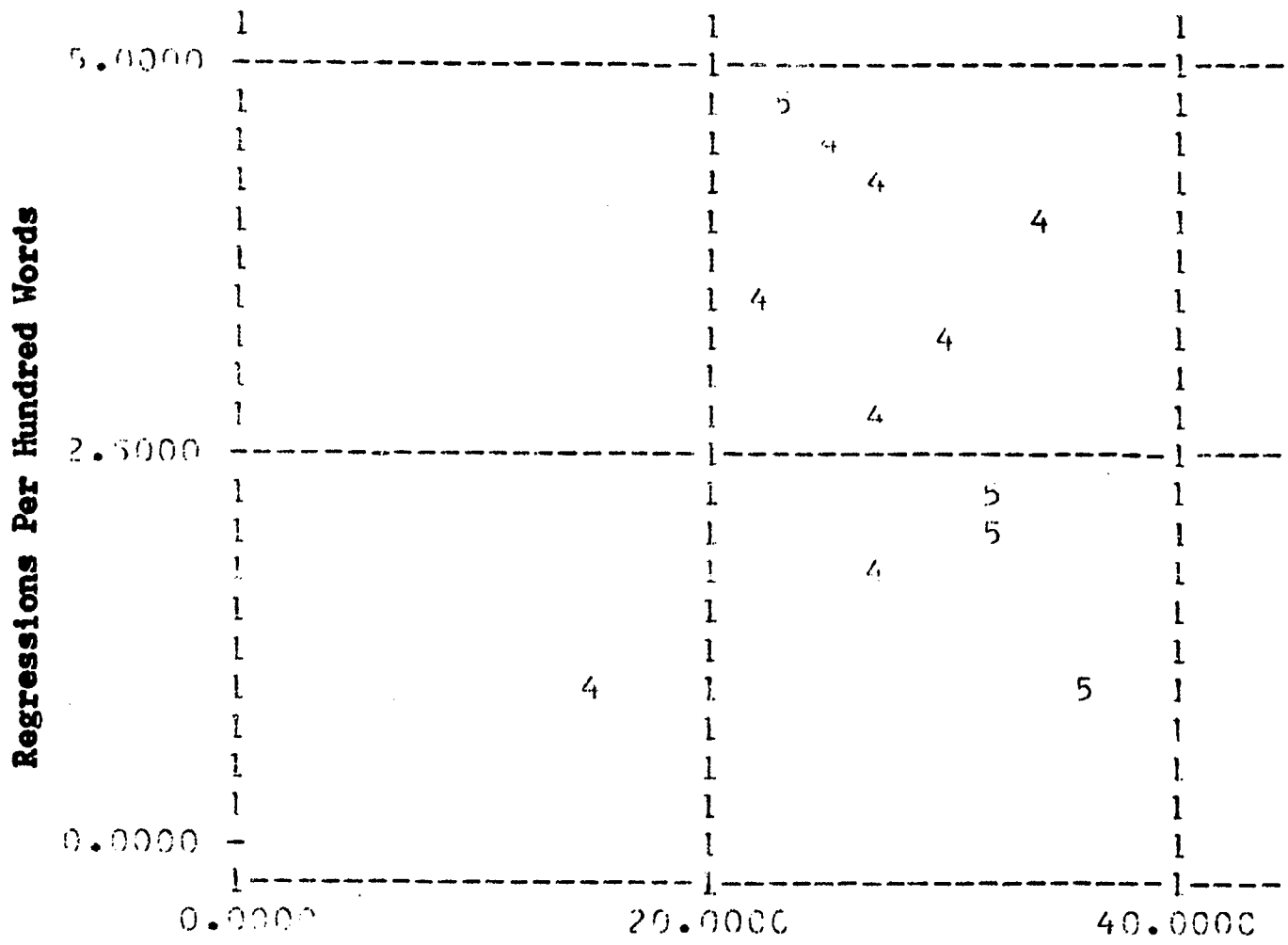
The subject who had the lowest number of regressions per hundred words, coupled with a high number of miscues per hundred words, also had the lowest comprehension score (15) for the study. The subject with the highest number of regressions and highest number of miscues, had a relatively high comprehension rating (27).

These inter-relationships between miscues, comprehension and regressions uphold the opening statement that regressions function as a self correction process for the reader. Within moderate ranges an increase in regressions corresponds to an increase in miscues and in comprehension.

In interpreting these figures some concern must also be given to reading mode. Some very competent readers will have few miscues and few regressions. Also, coupled with this might be the use of silent regressions, so that the pattern of high comprehension, low number of miscues and very low number of regressions would develop. At the other extreme would fall the reader who is not highly competent, who makes many miscues, but who has learned to view regressions as added mistakes and so avoids them. (Tachistoscope training can add to this attitude.) A pattern of high number of miscues, low number of regressions, and low comprehension will emerge for this reader.

FIGURE 4

Plot of Regressions Per Hundred Words And Comprehension For Individual Subjects



Regressions and Comprehension - Very similar results occur in comparing comprehension ratings with total number of regressions. (See Figure 4) There are readers with (1) low comprehension score and low number of regressions, (2) high comprehension score and high number of regressions, and (3) high comprehension score and low number of regressions. Within the medium range of comprehension (27-32), with one exception, the number of regressions also remained moderate (37-68).

Anticipatory Regressions - During the research another type (or sub-type) of regression began to be discerned. The researcher has termed this regression an anticipatory regression. These regressions occur when the child seems to be preparing to process some difficulty that is in his visual periphery. He repeats a word or phrase (sometimes several times) as if he were taking a running start. This can occur on the word immediately prior to the problem word or can occur up to six or seven words before.

This phenomenon is often coupled with a pause just prior to the regression. Other times the word has caused trouble earlier in the material and the subject makes or attempts to make the correction at this point.

One example of an anticipatory regression involves the E. R., Three other men worked on the Turn About. Turn About is the name of a boat in a story and proved to be difficult for all of the children who read the story. In repeated encounters with the name, one subject first tried True About. On the second encounter, he tried Try About, on the third, he simply omitted the name, and finally, on the fourth encounter, he read, Three other men worked on the - the - the (blank) (blank). Here it becomes obvious that the repetition of the was not to correct a previous miscue, but was involved in an attempted attack on Turn About.

The anticipatory regression was handled during the current research as an intonation regression.

In summary -It can be said that regressions are not errors. Regressions occur most frequently as attempts at correcting miscues which have occurred.

Within moderate ranges, regressions will increase as the number of miscues increase. Some individual reading modes will account for instances of extremely low or high number of regressions in relation to number of miscues.

Several new research questions developed as a result of the study. (1) A study of the significance of right and left hand context needs to be made concerning the possible effect upon word and phrase regressions. (2) A method for detecting silent regressions needs to be perfected, and the effect upon number of word and phrase regressions calculated. (3) The possibility of identifying anticipatory regressions through such techniques as pause timing should be explored. (4) Further research is needed on the effects of grammatical structure upon the percentage of phrase and word regressions occurring. (5) Regressions must also be studied over developmental periods to provide a more complete picture of their developmental function. (6) Further data must also be accumulated on the relationship between reading modes and regressions.

It should be noted that a discussion of regressions, as they occurred within this research, cannot be considered complete until incorporated, along with the information and data examined, under the heading of Corrections. Corrections and regressions are two interrelated aspects of the same phenomena. An E. R., ..., but I think it would be better not to have a contest., was read as, ..., but I think it would be better if -- not -- to have a contest. The miscue involved is handled both as a regression and as an instance of correction.

Conclusions About Regressions -

1. Regressions reflect a reader's attempts at correction and are not miscues in and of themselves.

2. Regression occurrences reflect both individual differences and group trends.

   a. The 4th graders had more regressions than did the 5th graders.

   b. The general trend was for word regressions to exceed phrase regressions.

   c. A small number of the subjects had more phrase regressions than word regressions.

   d. Some evidence led to the possibility of the presence of silent regressions.

   e. Some evidence indicated that the level of proficiency in the oral reading mode has a positive correlation to the number of reading regressions.

3. There appears to be a bimodal relationship between regression occurrences and number of miscues.

   a. At the two extremes, both a high number and a low number of regressions are associated with a high number of miscues.

   b. Within medium ranges, an increase in regressions is associated with an increase in miscues.

4. There appears to be a bimodal relationship between comprehension scores and regressions.

   a. At the two extremes, a high or low comprehension score can be associated with either a high or low number of regressions.

   b. A comprehension rating in the medium range is usually associated with a moderate number of regressions.

5. There is evidence that some regressions might involve anticipation of difficulties observed within the visual periphery.

D. SYNTACTIC INFORMATION

This portion of the data is concerned with the relationship of syntactic information to miscues and corrections. There is concern for whether information at the syntactic level was or was not involved in the initial miscue and the effect on any following correction attempts. Also, whether the miscue caused a change in meaning and/or syntax is examined, as is semantic and/or syntactic acceptability of the miscue.

TABLE 25A

Grammatical Functions of The E. R. And O. R. For The Total Group

Grammatical Function of Stimulus	Grammatical Function of Response: Noun	Verb	Adjective	Adverb	Function Word	Indeterminate
Noun	177 .903	3 .015	0 .000	1 .005	13 .066	2 .010
Verb	4 .024	153 .933	1 .006	2 .012	3 .018	1 .006
Adjective	2 .024	3 .036	74 .892	1 .012	1 .012	2 .024
Adverb	5 .106	1 .021	3 .064	34 .723	4 .085	0 .000
Function Word	11 .058	3 .016	0 .000	1 .005	171 .905	3 .016
Indeterminate	0 .000	0 .000	0 .000	0 .000	0 .000	70 1.00

TABLE 25B

Grammatical Function of E. R. And O. R.
For 4th Grade Subjects

Grammatical Function of Stimulus	Grammatical Function of Response: Noun	Verb	Adjective	Adverb	Function Word	Indeterminate
Noun	130 .903	2 .014	0 .000	1 .007	11 .076	0 .000
Verb	3 .026	106 .930	1 .009	2 .018	2 .018	0 .000
Adjective	2 .035	1 .017	53 .914	1 .017	1 .017	0 .000
Adverb	4 .129	1 .032	1 .032	23 .742	2 .065	0 .000
Function Word	9 .063	1 .007	0 .000	0 .000	130 .909	3 .021
Indeterminate	0 .000	0 .000	0 .000	0 .000	0 .000	55 1.00

TABLE 25C

Grammatical Function of E. R. And O. R.
For 5th Grade Subjects

Grammatical Function of Stimulus	Grammatical Function of Response: Noun	Verb	Adjective	Adverb	Function Word	Indeterminate
Noun	47 .904	1 .019	0 .000	[illegible]	2 .[illegible]8	2 .[illegible]39
Verb	1 .020	[illegible]7 .940	[illegible]	[illegible]	1 .02[illegible]	1 .02[illegible]
Adjective	[illegible]	2 .08[illegible]	21 .840	[illegible]	[illegible]	2 .080
Adverb	1 .063	[illegible]	2 .125	11 .688	2 .125	[illegible]
Function Word	2 .044	2 .044	[illegible]	1 .022	41 .891	[illegible]
Indeterminate	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	15 1.00

Grammatical Function of the E. R. and O. R. - In the section on miscues, data was presented concerning the grammatical function of the E. R., the percentage of occurrence of each grammatical function within the text, and the percentage of miscues failing within each grammatical function. In this section, the data concerning the grammatical function of the E. R. as compared to the grammatical function of the O. R. are examined. (See Tables 25A, B, & C.)

The rank order of the percentage of occurrence within each of the categories is so similar for the group as a whole and for each of the sub-groups, that only the figures for the total group will be used in the following discussion.

In all instances, E. R.s which were of indeterminate function were replaced by O. R.s of indeterminate function. This is in part a result of the use of dictionary definitions in the text.

The verb function formed the second highest group with 93% replacement within the same function. Following closely are function words with 91%, nouns with 90%, and adjectives with 89%.

The lowest percentage of similar function substitution, 72%, occurred with words functioning as adverbs. This might be explained by the fact that the adverbial function is practically non-existent in basal reading texts at the early elementary levels, and occurs in low percentages in middle grade texts. Only 6% of the words, in the text used for this research, were functioning as adverbs. Young readers receive little practice in dealing with adverbs.

A second factor which can make adverbs difficult for young readers involves their ability to function as movables. Adverbs, more than other grammatical functions, can freely move position within a given grammatical structure as can be demonstrated in the following sentences.

The child played happily with the pup.
The child played with the pup happily.
The child happily played with the pup.
Happily the child played with the pup.

Word position then, does not function as a very useful tool in determining words functioning as adverbs.

The data, as a whole, involving the grammatical function of both E. R. and O. R., indicates that superior young readers replace, in a high percentage of instances, an E. R. with an O. R. fulfilling the same grammatical function. This is strong evidence that these readers have control, at least at a subconscious level, of grammatical structure.

TABLE 26

Relationship Between Miscue Level
And Type For The Total Group

Level	Type					
	Substitution	Insertion	Omission	Reversal	Reversal w/Sub., Insert. or Omit.	Substitution w/ Insert. or Omit.
Sub Morpheme	136 .645	20 .095	42 .199	5 .024	1 .005	7 .033
Bound Morpheme	21 .191	23 .209	58 .527	0 .000	0 .000	8 .073
Free Morpheme	336 .496	82 .121	190 .280	2 .003	5 .007	63 .093
Phrase	19 .221	2 .023	11 .128	16 .186	5 .058	33 .384
Sentence	4 .148	4 .148	16 .593	1 .037	0 .000	2 .074

Level And Type of Miscue - At the submorphemic level, the largest percentage of the miscues, 65%, were substitutions. (See Table 26) Involved are such things as an E. R. of hit and an O. R. of hid.

At the bound morpheme level, the largest percentage of miscues, 53%, were omissions. Involved here is the omission of endings, such as an E. R. of going and an O. R. of go. (Dialect would be a factor here.)

Substitutions account for 50% of the miscues at the free morpheme level. This can involve such things as the substitution of the word book for the E. R. dictionary. Another 28% of the free morpheme miscues are omissions. In this instance the written E. R. has simply been omitted from the oral reading.

The largest single type of phrase miscue, 38%, involved substitutions with omissions or insertions. This could include an E. R. of the little boy with an O. R. of a child. Another 22% of the phrase level miscues involved substitutions. Here the E. R. the dictionary could have an O. R. of a book.

At the sentence level, 59% of the miscues involved omissions. Most frequently, omissions at this level involved juncture, as, for example, the omission of a terminal juncture and the running together of two E. R.s.

The structural level at which a miscue occurs, functions in determining the type of miscue which is most likely. A submorphemic miscue is most likely to be a substitution, while a bound morpheme miscue is most likely to be an omission.

TABLE 27

Relationship Between Miscue Type
And GFSTM*For The Total Group

Type	GFSTM: Noun	Verb	Adjective	Adverb	Function Word	Indeterminate
Substitution	114 .230	100 .202	51 .103	24 .048	142 .286	55 .111
Insertion	15 .289	17 .327	7 .135	2 .038	5 .096	4 .077
Omission	63 .226	30 .108	41 .147	17 .061	110 .394	8 .029
Reversal	3 .500	2 .333	0 .000	1 .167	0 .000	0 .000
Reversal w/Sub., Insert. or Omit.	4 .500	1 .125	1 .125	0 .000	2 .250	0 .000
Substitution w/ Insert. or Omit.	23 .274	25 .298	9 .107	2 .024	22 .262	3 .036

Type and GFSTM - Substitution of function words, with 142 instances, constituted the single most frequent miscue type. (See Table 27) Substitution of nouns, with 114 instances, was second. The omission of function words, with 110 instances, was third; and fourth, with 100 instances, was the substitution of verbs.

Substitutions, with 496 instances of occurrence, constitute the most frequent miscue type. Of these substitution miscues, 29% involve function words, 23% involve nouns, and 15% involve adjectives.

Omission miscues, with 279 instances of occurrence, constitute the second most frequent category. Of these omission miscues, 39% involve function words, 23% nouns, and 15% involve adjectives.

Substitutions with insertions or omissions constitute the third most frequent category with 84 instances of occurrence. Of these substitutions with insertion or omission miscues, 30% involve verbs, 27% involve nouns, and 26% involve function words.

* GFSTM - grammatical function of the E.R.

Insertions, with 52 instances of occurrence, constitute the fourth most frequent category. Of these insertion miscues, 33% involve verbs, 29% involve nouns, and 15% involve adjectives.

The instances of actual occurrence are so low for reversals and for reversals with insertions, omissions or substitutions that the percentages for these two types will not be considered here.

The grammatical function of the E. R. influences the type of miscue most likely to occur. Substitutions occur most frequently with function words; with nouns and verbs following closely in percentage of occurrence. Insertions involve verbs and nouns most frequently. Omissions most frequently involve function words, with nouns second in occurrence. Substitutions with insertions and omissions most frequently involve verbs; then nouns and function words in close order. Adverbs or adjectives do not occur in high percentages for any of the miscue types.

TABLE 28

Percentage of Miscues Involving Syntax

Subject	Not Involved	Single Element	Rephrasing	Rephrasing w/ Rewording	Dialogue Carriers
Total	573 .512	474 .423	15 .013	41 .037	17 .015
4th	406 .486	374 .447	7 .008	35 .042	14 .017
5th	167 .583	100 .352	8 .028	6 .021	3 .011

Miscues Involving Syntax - Of the total miscues, 49% involved some aspect of syntax. (See Table 28) Of the four categories of syntax involvement, the largest group, 42%, involved single elements. A total of only 5% of the miscues were involved in rephrasing or regrouping of basic elements. This means that in 49% of the miscues, the reader was making use of structural knowledge.

TABLE 29

Percentage of Miscues
Involving Grammatical Transformation

Subject	No	Alternative Phrases	Non-equivalent Phrases	Dialect Form	Syntactic Consistency
	825	33	245	4	12
Total	.737	.030	.219	.004	.011
	581	26	215	4	9
4th	.696	.031	.258	.005	.011
	244	7	30	0	3
5th	.859	.025	.106	.000	.011

Miscues Involving Grammatical Transformation - Closely connected with the question of syntax involvement is the question of the occurrence of a grammatical transformation. The transformation category of the taxonomy was a limited one, in that an attempt was made to tally only four broad kinds of transformation. For the group as a whole, 74% of their miscues did not fall within one of the four transformational categories. (See Table 29) This leaves 26% which did fit a transformational category. The largest group of transformations, 22%, came under the heading of grammatical transformations with non-equivalent phrases. The second group, with 3%, fell under transformations which retained the same grammatical kernal. There remains just a bare showing of transformations involving dialect based forms and revisions to achieve syntactic consistency. Going back to the figures concerning syntactic involvement, it can be seen that there were 547 actual miscues which were marked as having syntax involvement. Of the 547 miscues, fully 394 were also judged to involve a grammatical transformation. The question remains, how many more of the syntax involved miscues would also have been marked transformations if the transformation categories had been expanded. (A study is planned in this area.)

TABLE 30

Percentage of Miscues
Involving Meaning Change

Subject	No Change	Change	Doubtful
	568	546	5
Total	.508	.488	.005
	454	376	4
4th	.544	.451	.005
	114	170	1
5th	.400	.597	.004

TABLE 31

Percentage of Miscues
Involving Syntax Change

Subject	No Change	Change	Doubtful
	571	546	2
Total	.510	.488	.002
	415	419	0
4th	.498	.502	.000
	156	127	2
5th	.547	.446	.007

Miscues That Lead To Changed Meaning And Syntax - For the total group, 49% of the miscues resulted in meaning change. (See Table 30) The figures for the two sub-groups show some variation, with 45% of the 4th graders' miscues and 60% of the 5th graders' miscues resulting in meaning change.

Syntactic change for the total group involved 49% of the miscues. (See Table 31) The figures for the two sub-groups show some variation, with 50% of the 4th graders and 45% of the 5th graders miscues resulting in syntax change.

TABLE 32

Percentage of Miscues Involving Meaning and Syntax Change For Individual Subjects

Subject		Semantic Change			Syntactic Change		
		No Change	Change	Doubtful	No Change	Change	Doubtful
	32	92 .523	83 .472	1 .006	85 .483	91 .517	0 .000
	34	35 .660	18 .340	0 .000	38 .717	15 .283	0 .000
	35	26 .473	27 .491	2 .036	25 .455	30 .546	0 .000
4th	37	27 .397	41 .603	0 .000	27 .397	41 .603	0 .000
	39	14 .359	25 .641	0 .000	22 .564	17 .436	0 .000
	40	90 .517	84 .483	0 .000	66 .379	108 .621	0 .000
	41	67 .523	60 .469	1 .008	77 .602	51 .398	0 .000
	42	103 .731	38 .270	0 .000	75 .532	66 .468	0 .000
	54	33 .282	84 .718	0 .000	70 .598	45 .385	2 .017
5th	55	10 .222	35 .778	0 .000	29 .644	16 .356	0 .000
	57	29 .518	27 .482	0 .000	22 .393	34 .607	0 .000
	64	42 .627	24 .358	1 .015	35 .522	32 .478	0 .000

Miscues That Lead To Changed Meaning and Syntax For Individual Subjects - It is also profitable to examine the percentages of meaning change and syntax change for individual readers. Examined in this way, a degree of individual differences can be seen. (See Table 32) Readers #54 and #55 both have a high percentage of meaning change (72% and 78%, respectively) and a low percentage of syntax change (39% and 36%, respectively).

Reader #34 has a low percentage for both meaning change (34%) and syntax change (28%). This same trend is true for Reader #64.

Readers #64, #57, #42, #40, #35 and #32 all have higher percentages for syntax change than they do for meaning change.

It seems that this is an area which better reflects individual reading styles and difficulties than any common trend or pattern for the group as a whole.

TABLE 33

Relationship Between Syntactic Change And Syntactic Acceptability For The Total Group

Syntactic Acceptability	Syntactic Change: No Change	Change	Doubtful
Not Acceptable	4 .087	40 .870	2 .044
With Prior	8 .064	117 .936	0 .000
With Following	1 .111	8 .889	0 .000
In Sentence	2 .143	12 .857	0 .000
In Passage	556 .601	369 .399	0 .000

Syntactic Change And Syntactic Acceptability - Where there was either partial or no acceptability, the greatest percentage of the miscues involved syntax change; 87% for no acceptability, 94% for acceptability with prior structure, 89% for acceptability with structure following, and 86% for acceptability at the sentence level. (See Table 33) However, when the miscue was totally syntactically acceptable, there was no syntax change in 60% of the miscues. When a miscue was totally syntactically acceptable, the probability of it also involving syntax change was less.

TABLE 34

Relationship Between Semantic Change And Semantic Acceptability For The Total Group

Semantic Acceptability	Semantic Change: No Change	Change	Doubtful
Not Acceptable	7 .043	155 .951	1 .006
With Prior	28 .157	150 .843	0 .000
With Following	3 .250	9 .750	0 .000
In Sentence	1 .012	81 .988	0 .000
In Passage	528 .773	151 .221	4 .006

Semantic Change And Semantic Acceptability - Where there was either partial or no acceptability, the greatest percentage of the miscues involved semantic change; 95% for no acceptability, 84% for acceptability with prior meaning, 75% for acceptability with following meaning, and 99% for acceptability at the sentence level. (See Table 34) When there was total semantic acceptability, the trend was reversed, and 77% of the miscues involved no semantic change. When a miscue was totally semantically acceptable, the probability of it also involving semantic change was less.

In comparing the figures for total syntactic acceptability with syntax change, and total semantic acceptability with semantic change, it can be seen that a greater percentage of the total miscues involve change at the syntactic level (40%) than at the semantic level (22%). Totally acceptable miscues are more likely to involve syntactic change than semantic change.

TABLE 35

Relationship of Meaning Change To
GFSTM For The Total Group

	Semantic Change		
GFSTM	No Change	Change	Doubtful
Noun	88 .393	135 .603	1 .005
Verb	78 .446	97 .554	0 .000
Adjective	51 .464	59 .536	0 .000
Adverb	32 .478	35 .522	0 .000
Function Word	159 .564	123 .436	0 .000
Indeterminate	46 .648	22 .310	3 .042

Grammatical Function And Meaning Change - In examining the GFSTM in connection with the question of whether meaning is changed or not, it can be seen that for nouns, verbs, adjectives, and adverbs, the percentages for meaning change are higher than those for no meaning change. (See Table 35) So there is a slight tendency for a miscue to involve meaning change.

The highest percentage of meaning change, 60%, occurred when the grammatical function was a noun.

The verb function was second, with 55% of the miscues involving meaning change; adjectives and adverbs follow with 55% and 54%, respectively.

In examining function words, however, the trend changes. Fully 56% of function word miscues did not involve meaning change. This becomes all the more interesting when consideration is given to the fact that the function word category covers nine different functions - noun marker, verb marker, verb particle, question marker, clause marker,

phrase marker, intensifier, conjunction, negative. With a wider possible range of error within the category itself, the children still had less tendency to alter meaning. This would have to mean that in a large percentage of cases, the reader was replacing noun marker for noun marker, verb marker for verb marker, etc.

It should be pointed out that once the reader has replaced the function word with another word fulfilling the same function, the possibility of meaning change becomes less than it is for the other grammatical categories. Function words act as signals marking or defining the word groups which follow them. Their main task is structural and so they bear less meaning than do other grammatical functions. For example, an E. R. can be: I opened the dictionary and picked out the word that sounded good., with an O. R. of: I opened a dictionary and picked out a word that sounded good. In this case, the function word substitution does not cause a meaning change.

TABLE 36

Relationship of Syntax Change to GFSTM for The Total Group

GFSTM	Syntax Change: No Change	Change	Doubtful
Noun	141 .630	83 .371	0 .000
Verb	110 .629	64 .366	1 .006
Adjective	67 .609	42 .382	1 .009
Adverb	34 .508	33 .493	0 .000
Function Word	138 .489	144 .511	0 .000
Indeterminate	68 .958	3 .042	0 .000

Grammatical Function and Changed Syntax - It can be seen that for nouns, verbs, adjectives and adverbs there is a slight tendency in favor of no syntax change. (See Table 36) Again, the function word category offers the exception. There is a slight tendency for miscues in this category to result in syntax change.

Of the 282 miscues involving function words, 144 or 51% involved syntax change. The disparity between this figure, and the fact that 123 or 44% of the same miscues involved a meaning change, can be explained again in terms of their structural task. It is fully possible for function words to be inserted or omitted without changing meaning.

E. R.: Suddenly I jumped from the chair, ...
O. R.: Suddenly I jumped up from the chair, ...

E. R.: I opened it to the S's.
O. R.: I opened it to S's.

The figures would seem to indicate that at both the structural and semantic level, function words can sustain more changes than other grammatical functions without affecting text meaning.

TABLE 37

Semantic Acceptability of Miscues

Subject	Not Acceptable	With Prior	With Following	In Sentence	In Passage
Total	163 .146	178 .159	12 .011	82 .073	683 .611
4th	115 .138	136 .163	8 .010	60 .072	515 .618
5th	48 .169	42 .148	4 .014	22 .078	168 .592

Semantic Acceptability of Miscues - The figures for the two subgroups and the group as a whole are within a few percentage points of one another.

For the group as a whole, only 15% of the miscues resulted in structures which were totally unacceptable in meaning. (See Table 37)

Miscues resulting in patterns which were acceptable within the passage accounted for 61% of the miscues. This means that in 61% of the cases, the reader's miscue resulted in meaning which was either unchanged or so little changed that it did not affect the meaning of the passage.

Sixteen percent of the miscues resulted in meaning which was acceptable with prior meaning. Third in order of occurrence was the 7% of the miscues which resulted in meaning acceptable only at the sentence level. In this case, the miscue resulted in an acceptable sentence, but semantically the sentence did not concur with the passage.

One percent of the miscues resulted in meaning which was acceptable only in the portion of the sentence following the miscue. It is interesting to compare this figure with the 16% involved in prior acceptability. This seems to point strongly to the fact that children rely heavily on the past information provided in the material in their efforts at decoding.

Fully, 85% of the reader's miscues resulted in semantic statements which were either partially or totally acceptable. This means, that, for these children, a miscue in and of itself does not necessarily result in a total meaning loss. Further, the figures support the fact that the readers were reading for meaning and were making an attempt, even in miscues, to provide a semantically acceptable response.

TABLE 38

Syntactic Acceptability of Miscues

Subject	Not Acceptable	With Prior	With Following	In Sentance	In Passage
Total	46	125	9	14	926
	.041	.112	.008	.013	.827
4th	28	99	6	10	692
	.034	.119	.007	.012	.829
5th	18	26	3	4	234
	.063	.091	.011	.014	.821

Syntactic Acceptability of Miscues - When miscues are examined in light of their syntactic acceptability, the figures for the two sub-groups and the total group are so close that only the figures for the total group will be discussed here.

First, 83% of the reader's miscues resulted in structures which were totally syntactically acceptable within the text. (See Table 38) Second in frequency of occurrence were 11% of the miscues which were syntactically acceptable only with the prior portion of the sentence. One percent are acceptable only with the portion of the sentence following.

Another 1% of the miscues resulted in structures that were syntactically acceptable only within the sentence. One possibility for the low percentage here could be that if a miscue results in a syntactically acceptable structure at the sentence level, it is apt to be totally acceptable within the passage as a whole.

Ninety-six percent of the miscues result in syntactical structures which are either partially or totally acceptable. As in the case of semantic acceptability, this figure points to the fact that readers have a strong intuitive control of syntax which operates as a part of their reading process.

In comparing the fact that 85% of the miscues result in partial or total semantic acceptability, against the fact that some level of syntactic acceptability results for 96% of the miscues, there is basis for the argument that syntactic clues are more basic in the reading process than are semantic clues.

TABLE 39

Intonational Acceptability of Miscues

Subject	Not Acceptable	Acceptable	With Prior	With Following
Total	23 .021	999 .893	93 .083	2 .002
4th	17 .020	737 .884	77 .092	2 .002
5th	6 .021	262 .919	16 .056	0 .000

Intonational Acceptability of Miscues - As with semantic and syntactic acceptability, the figures for the group as a whole will be examined.

A total of 89% of the miscues resulted in intonation patterns which were acceptable within the text as a whole. (See Table 39)

Intonation patterns which were acceptable only with prior text resulted in 8% of the miscues. Intonation patterns which were acceptable only with text following the miscue resulted in 2% of the cases.

Only 2% of the total number of miscues resulted in completely unacceptable intonation patterns. This is a smaller percentage than the corresponding figures for both unacceptable semantic and syntactic patterns. There seems to be indication that as intonation skills are developed first in the oral speech of children, they also develop first in the reading process.

Conclusions About Syntactic Information -

1. The grammatical function of the stimulus does affect the grammatical function of the response. In a high percentage of instances (from 72% to 92%) the E. R. is replaced with an O. R. fulfilling the same grammatical function.

2. The structural level at which a miscue occurs influences the miscue type.

   a. At the submorphemic level, 65% of the miscues were substitutions.

   b. At the bound morpheme level, 53% of the miscues were omissions.

   c. At the free morpheme level, 50% of the miscues were substitutions.

   d. At the phrase level, 38% of the miscues were substitutions with insertions or omissions.

   e. At the sentence level, 59% of the miscues were omissions.

3. The grammatical function of the E. R. influences the miscue type.

   a. Substitutions occur most frequently for function words.

   b. Insertions occur most frequently for verbs and nouns.

   c. Omissions occur most frequently for function words.

   d. Substitutions with insertions or omissions occur most frequently for verbs, nouns, and function words.

4. Syntax was involved in 49% of the total miscues.

5. Twenty-six percent of the miscues involved grammatical transformations (as defined within the taxonomy).

6. A meaning change resulted for 49% of the miscues.

7. A syntax change resulted for 49% of the miscues.

8. Percentages of meaning and syntax change reflect individual reading styles and difficulties.

9. Syntactic change affects syntactic acceptability.

   a. Miscues which were totally syntactically acceptable included syntactic change 40% of the time.

   b. Miscues which were either totally or partially unacceptable included syntactic change from 96% to 86% of the time.

10. Semantic change affects semantic acceptability.

a. Miscues which were totally semantically acceptable included semantic change 22% of the time.

b. Miscues which were totally or partially semantically unacceptable included semantic change from 99% to 84% of the time.

11. Totally acceptable miscues are more likely to involve syntactic change than semantic change.

12. The grammatical function of the miscue influences meaning change.

a. There is a slight tendency for meaning change with miscues involving nouns, verbs, adjectives, and adverbs.

b. There is a slight tendency against meaning change with miscues involving function words.

13. The grammatical function of the miscue influences syntax change.

a. There is a slight tendency against syntax change with miscues involving nouns, verbs, adjectives, and adverbs.

b. There is a slight tendency for syntax change with miscues involving function words.

14. Eighty-five percent of the miscues resulted in some level of semantic acceptability, with 61% being totally acceptable within the passage.

15. Ninety-six percent of the miscues resulted in some level of syntactic acceptability, with 83% being totally acceptable within the passage.

16. Ninety-eight percent of the miscues resulted in some level of intonational acceptability, with 89% being totally acceptable within the passage.

17. The order of occurrence, from high to low, for total acceptability runs: intonation, syntax, meaning.

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APPENDIX A

CODING FOR A COMPUTER PROGRAM USING THE TAXONOMY OF CUES AND MISCUES IN READING*

The taxonomy is a system for examining the possible elements that are involved when a reader's oral response differs from the expected response. When a difference does occur between an observed response (O.R.) and the expected response (E.R.) the observed response is termed a miscue and is examined in light of the twenty-eight categories that exist within the taxonomy.

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*Prepared by Carolyn Burke

TAXONOMY

Variable Name

36 CRECT

Correction

We start examining the miscue by asking whether the reader made any attempt at correcting. We are concerned with whether:

(0) He made no attempt at correction.

(1) He did correct.

(2) He abandoned a correct word or phrase for an incorrect one.

(9) He made an unsuccessful attempt at correcting.

37 GFRSP

Grammatical Response

The grammatical function of the reader's O.R.:

(1) Noun

(2) Verb

(3) Adjective

(4) Adverb

(5) Function word. If the O.R. is

a function word it must also be marked under #53.

(6) Indeterminate - There is no way of determining exactly which grammatical function it is fulfilling.

If the reader's miscue was at the phrase level two possibilities exist. First, if the O.R. involved more than one grammatical function this category is omitted. Second, if the phrase, as a whole, performed one grammatical function, such as a verb or noun phrase, then the appropriate category can be marked.

Sometimes the O.R. will involve a non-word. In this case the word may still be marked in a grammatical function, if the child's intonation is appropriate to that function. If the intonation is not appropriate to a particular function then the O.R. must be marked indeterminate (6).

38 GFSTM Function of Expected Response

The grammatical function of the E.R. was:

(1) Noun

(2) Verb

(3) Adjective

(4) Adverb

(5) Function word - If the E.R. is a function word it must also be marked und under #54.

(6) Indeterminate - This can include list words or dictionary definitions.

39 TYPE Type

The question concerns the type of miscue that was involved. The possible types include:

(1) Substitution - The E.R. was replaced, element for element.

(2) Insertion - An element was added to the reading.

(3) Omission - An element from the E.R. was omitted.

(4) Reversal - A change in position

occurred between two phrases in the E.R., between two words, or between two graphemes within the word.

(5) Reversal - As defined in #4, which also involved a substitution, insertion, or omission at the phrase, word or grapheme level.

(6) Substitution - As defined in #1, which also included an insertion or omission at the phrase, word, or grapheme level.

40 RELAT Related

The question was asked whether this miscue is directly related to another miscue.

The possible answers include:

(0) No relationship existed to another miscue.

(1) A relationship did exist to a prior miscue.

(2) A relationship did exist to a subsequent miscue.

In instances (1) and (2) a change to achieve grammatical consistency may have been involved.

(9) There is a possible, but doubtful, relationship between two miscues.

41 IDENT Word-Getting

This category was concerned with a child's eventual identification of a word or phrase which was involved in a miscue. This category is used only when the basic assumption is that the child did not know the E.R. involved. (This means that this category becomes less important with older and/or more proficient readers.)

When this category is marked, the choices involved include:

(0) The child never corrected his miscue on a subsequent trial - This area is also marked if the E.R. never appears in the text again.

(1) A correct earlier instance indicates that in a previous situation, in the text, the child had given the correct O.R. for the same E.R.

(2-8+) If a child made a correction in a subsequent instance the appropriate number (2-8) is marked to indicate the instance of the correction. The #8 is used to indicate a correction which occurred on or after the eighth occurrence of the word.

(9) This number is used when the child was inconsistent in correctly identifying a word - He might be correctly identifying in some instances and failing to do so in others.

42 REPET <u>Recurrence of Miscues</u>

This category is directly tied to IDENT (#41) and is marked only when IDENT has been used. The category is concerned with the number of times which a child repeated the same miscue for a specific E.R.

(1-8) The numbers 1 through 8 were used to indicate the exact number of times the same miscue is repeated.

(9) The #9 was used on and after the ninth occurrence of the miscue.

There is one exception to this rule. Miscues are only counted as subsequent instances of the same miscue when the grammatical function of the E.R. has remained the same in all instances.

For example, a child might have replaced circus in two instances but have the function of circus a noun in one instance (The circus was in town.) and an adjective in the other (The circus clown was funny.) In this case these would be marked as two separate miscues and not as repetitive occurrences of one miscue.

43 LEVEL

Level

The question concerns the level at which the miscue occurred. The level could be:

(1) Sub-morphemic within the morpheme or word - This would involve substitutions, insertions, omissions, or reversals of graphemes or syllables.

(2) Bound morpheme - This involves substitutions, insertions, omissions of inflectional, contractional, or derivational suffixes or prefixes, and of parts of compounds.

(3) Free morpheme - This involves any one of the miscue types which occurs on a word or free morpheme level.

(4) Phrase - This involves miscues which incorporate more than one word or morpheme.

(5) Sentence level and larger - These miscues usually involve terminal intonational patterns.

44 WORDS — Number of Words in Miscues

The number of words involved in the miscue is counted. The largest number is used - either the E.R. or the O.R.

(0) The number involved is less than a word - This involves a sub-morphemic or bound morphemic miscue.

(1-8) Indicates the exact number of words involved.

(9) Used for any number nine or over.

45 GRAPH — Graphic Relationships

This category is concerned with whether the miscue might have involved any graphic cues.

(0) No - The miscue did not fit into any of the eight possibilities below.

(1) The E.R. and the O.R. differ in a single grapheme - This can include a substitution of letters (such as hit in place of hat), an omission of a letter (such as my in place of may), an insertion

of a letter (such as hate for hat). This category also includes digraphs (such as brother in place of mother).

(2) The E. R. and the O.R. have a similar spelling - (Barny for Barnaby, forceable for favorable, or shopped for stepped).

(3) The E. R. and the O.R. have key elements in common - The examples which fall within this category will vary a little with the age and proficiency level of the reader. Young beginning readers might use initial consonants as a graphic cue. So that say for Sally, or will for where would have key elements in common, With older, more proficient readers, examples would include advise for advertise, physical for philosophical.

(4) The general configuration of the E.R. and the O.R. conform - This involves general outline, shape, and size. Will in place of mitt would involve such a correspondence.

(5) The O.R. is a non-word that has graphic similarity to the E.R. - Examples include suvage in place of savage, sinwy for sinewy, orgigonal for original, and uniless in place of useless.

(6) The E. R. and the O.R. were homographs - These are words that have identical graphic symbols but differing pronunciations. The word read in the present tense and the word read in the past tense offer such an example.

(7) The syllables of the E.R. were split, resulting in an idiosyncratic or deviant pronunciation - Examples would include the word pret/ty where the sound /t/ is heard twice, string/gy

where /ng/ is heard in place of the /n/ sound or dis/tinct in which a juncture is added within the word.

(8) Allographs involve a miscue which results from differences in graphic representation such as a switch from lower case to upper case letters, or from manuscript to cursive writing - Examples include an initial capital letter such as Rabbit when the child only recognized the form rabbit, or all upper case characters such as LAUGHED when the child recognizes the word only where the lower case letters are used.

46 FIELD Peripheral Cues

Here there is interest in whether an F.R. within the periphery of the child's vision might have cued the miscue. The material read is scanned to determine if the O.R. can be found in the periphery. Possibilities include:

(0) No - The O. R. is not in the periphery.

(1) Close - The O.R. can be found either one line above or one line below the line in which the miscue occurred.

(2) Extended - The O.R. can be found in the second line above or below the line in which the miscue occurred.

(9) Doubtful - There is some doubt as to whether the O.R. was in the reader's periphery due to position and/or distance.

47 DILCT Dialect

This category is concerned with whether dialect was involved in the miscue.

(0) No - The miscue did not represent a dialect deviation.

(1) Yes - Dialect was involved in the miscue. Dialect was determined by using the examiner's own speech pattern as the standard. Speech deviations such as those occurring

with and in you 'an' I or bread 'n' butter, which are evaluated as being common to general speech patterns are not recorded as dialect. No value judgment is implied.

(2) Speech idiosyncrasies - These involve deviations which are consistent in the speech pattern of the reader, but which are not part of a dialect pattern for a particular group.

(9) Doubtful - Lack of evidence or lack of data makes it impossible to determine if the miscue is a consistent pronunciation, or if it is typical of any particular group.

48 ASSOC Habitual Association

The question asked here is whether any habitual association between two words might have helped cause the miscue.

(0) No - Habitual association was not involved.

(1) The E.R. and O.R. are associated habitually by the reader. An example would involve, the E.R. Oh and the O.R. look.

(2) A sequential association involves an O.R. which, for the reader, is associated sequentially with the E. R. - In this instance the reader might see happy and respond with birthday because of the common sequence happy birthday.

(9) Doubtful - The material did not provide enough opportunities to establish whether there is habitual association, or in cases where the child might be inconsistent.

An arbitrary number of 3 occurrences was set as the determining factor in marking habitual. The associations could be entirely idiosyncratic and occur as habitual associations only within the context of the material being read.

49 PHONM Phonemic Relationships

This category was concerned with whether the miscue might have involved any phonemic cues.

(0) No - The miscue does not fit into any of the six possibilities below.

(1) The E. R. and the O.R. differed in a single vowel phoneme - This can include a substitution of a phoneme (such as hat in place of hit), an omission of a phoneme (such as read in place of ready), or an insertion of a phoneme (such as ready in place read).

(2) The E. R. and O.R. differed in a single consonant phoneme - This can include a substitution (such as hat in place of bat), an insertion (such as bit in place of it), or an omission (such as at in place of rat).

(3) The E.R. and O.R. were homophones - These are words which have the same pronunciation but differing graphemic representation. Examples of such words include heard and herd, deer and dear. The reader's intonation must be used to determine which of the words was used.

(4) A morphophonemic variant or allomorph was marked when the reader had a consistent replacement of one sound for another within certain morphemic contexts - An example would involve replacing the /d/ sound with a /t/ sound in medial and final position. So that good would be pronounced /gat/, Goodman would become /gatman/.

(5) A full vowel sound is substituted for a schwa - In this case such words as a, away, and ahead, become /ey/, /eywey/ and /eyhed/.

(6) The same changes are involved here as were involved in 1 and 2, but in this case either the E. R. or the O.R. involved a two phoneme sequence - Examples here could involve replacing brown with town or round with ground.

50 ALLOG Allolog Relationships

Here the concern is with whether the miscue involved an allolog (an alternate word form).

(0) No - An allolog miscue was not involved.

(1) A two word sequence was replaced by a contraction - Examples include can't in place of can not, or he'll in place of he will.

(2) A contraction was replaced by a two word sequence - Examples could be won't replace by will not, or she'll replaced by she will.

(3) The E. R. was replaced by another word which is a long or short form of the O.R. - Airplane might be replaced by plane, or auto by automobile.

(4) Variant forms - This involves such substitutions as punkin for pumpkin, pitcher for picture or Mizz for either Miss or Mrs. In this case there is not a consistent substitution of one phoneme for another across a whole range of words but one substitution which is consistent for a particular word (this is the difference which exists between this miscue and 49 - 4)

51 MORPH MORPHEMIC RELATIONSHIPS

All of the sub-headings within this category were concerned with bound morphemes. (This category must be marked if #43 - 2 has been marked.)

(0) No - Bound morphemes were not involved.

(1) An inflectional suffix was involved - This can include an omission, insertion, or the substitution of an inflectional suffix.

(2) A contractional suffix was involved - This can include the omission, insertion, or substitution of a contractional suffix.

(3) A derivational suffix was involved - This can include the insertion, omission, or substitution of a derivational uffix.

(4) The omission, substitution, or insertion of a prefix was involved.

(5) The omission, insertion, or substitution of part of a compound word was involved.

(6) The omission or insertion of a syllable was involved.

(7) Replacing an inflectional suffix with a derivational suffix - For example, the E. R. <u>televised</u> and the O.R. <u>television</u>.

(8) Replacing a derivational suffix with an inflectional suffix - For example, the E. R. <u>reflection</u> and the O.R. <u>reflected</u>.

52 FORM Non-Inflected Word Forms

This category was marked when the miscue involved a change in tense, number, or degree in a word which was irregular.

(0) No - A change in tense, number or degree of a non-inflected word was not involved in the miscue.

(1) A change in a non-inflected verb form was involved - For example, go might have been replaced by went.

(2) A change in a non-inflected noun form was involved - For example, men might have been replaced by man.

(3) A change in a non-inflected adjective form was involved - For example, better might be replaced by good.

(4) A change in a non-inflected adverb form was involved - For example, least might be replaced by less.

(5) A change in a non-inflected function word was involved - For example, was functioning as a verb marker might be replaced by is.

53 FUNCR Response function words

This category was connected to category #37 and is marked when the reader's O.R. was a function word.

(1) The O.R. was a noun marker - For example, a, the, three, they, etc.

(2) The O.R. was a verb marker - For example, was, will, have, etc.

(3) The response was a verb particle - A verb particle is a word which often functions as a preposition, but which in this use becomes an adjunct to the verb itself. For example, down is a verb particle in the sentence: The car ran down the man. Particles may occur after the object, as in: The car ran the man down.

(4) The response was a question marker - For example, what, when, where, or why, at the beginning of an interrogative sentence.

(5) The response was a clause marker - For example, the word when in the sentence: He saw the man when he was tired.

(6) The response was a phrase marker - For example, of, for, in, or any word acting as the preposition of a phrase.

(7) The response was an intensifier - For example, the word very in the sentence: He is a very good player.

(8) The response was a conjunction - For example, and or or.

(9) The response was a negative - For example, no or not, but also including such words as don't, doesn't didn't, etc.

(+) Other - This includes words such as well and oh, which act as exclamation and do not alter the meaning or structure of the sentence when removed. For example, the word well,

in: Well, I was very mad.;

or the word Here, in Here, what are you doing?

54 FUNCS Stimulus Function Words.

This category is connected to category #38 and is marked when #38-5 has been marked. The E. R. was a function word and the appropriate heading is marked below. For examples under each heading look back to those given in #53.

(0) No - The E. R. was not a function word.

(1) The E. R. was a noun marker.

(2) The E. R. was a verb marker.

(3) The E. R. was a verb particle.

(4) The E. R. was a question marker.

(5) The E. R. was a clause marker.

(6) The E. R. was a phrase marker.

(7) The E. R. was an intensifier.

(8) The E. R. was a conjunction.

(9) The E. R. was a negative - This would include such words as don't,

won't, couldn't.

(+) The E. R. is a word such as well, oh, or here, which acted as an exclamation and would not alter the meaning or structure of the sentence if removed.

:b SYNTX Syntactic Miscues

The question is asked here whether the miscue was cued by syntax.

(0) No.

(1) The miscue involved a single element of the syntactical structure - This can include a particle. It can also include an insertion where the E. R. might be: I see the boy, and the O.R. becomes: I see the little boy; or an omission where the E. R. might be: There were some dogs; and the O. R. becomes: There were dogs; or a substitution where the E. R. might be: The flowers are pretty, and the O.R. becomes: Yellow flowers are pretty.

However, the reader's miscue does not always have to result ina a complete grammatically acceptable sentence. The E. R. could be: We could put it on between nine and ten on Thursdays, and the O.R. could be: We could put it on better. The result was not acceptable but the attack was still at the single element syntactic level.

(2) There was rephrasing with the basic elements retained - For example, the E. R. could read: Even I saw the light, and the O. R. could be: I even saw the light. This does not have to result in a totally syntactically acceptable sentence.

(3) There was rephrasing with rewording - An example could be the E. R.: So education it was! with the O.R.: So education is it? The result

does not have to be a syntactically acceptable sentence. For example. Suddenly I jumped from the chair, a wonderful idea implanted in my brain. could be the E. R., and Suddenly I jumped from the chair, I wonder. could be the O.R.

(4) The miscue was at a syntactic level and involved a dialogue carrier - This can include omissions, insertions, substitutions, and reversals. Examples include the E. R. Wouldn't want to imperil our good will, with the O.R.: Wouldn't want to imperil our good will, he answered, in which the dialogue carrier was added, the E. R., Intellectual? he cried, with the O.R. Intellectual? he said, in which a more familiar dialogue carrier was substituted; The E. R. Nonsense, my boy, Mr. Barnaby said, and the O.R. Nonsense my boy, said

Mr. Barnaby, in which the reader reversed the word order. One final example involves the omission of the dialogue carrier. The E. R. was, Excuse me, sir, I said, but I think ... and the O. R. was, Excuse me sir, but I think ... .

5b TRANS Transformations

Here concern is with whether a grammatical transformation was involved as a part of the miscue. The attack is at the structural level and involves changes in kernel sentences.

(0) No - A grammatical transformation was not involved.

(1) A transformation occurred in which the kernel sentence remained the same but alternate or equivalent phrases were used - This change can involve a change in tense, or an omission, insertion, or substitution. Examples could be: The E. R., The next day at noon, as soon as classes let out for lunch, I called the

local television state, with the O.R. The next day at noon, as soon as class let out for lunch, I called the local television station. The E. R., Excuse me, sir, I said, but I think it would be better not to have a contest, with the O.R., Excuse me, sir, I said, but I don't think it would be better not to have a contest.

(2.) A grammatical transformation occurred which involved a change in kernel sentences - Examples here can include: The E. R., All right, she said after a pause, Mr. Barnaby will see you if you come over right away, with the O.R. All right, she said after a pause, Mr. Barnaby will see, if you come over right away! ; the E. R. could be, Well he's home a lot, I said, with the O. R., Well he' at home a lot, I said. The E. R. might be, I don't remember what Mr. Barnaby said during the televised program, and the O.R. might be

I don't remember what Mr. Barnaby said during the television program.

(3) A transformation occurred to an alternate dialect based form - Examples could include the E. R., Cry all you want to! It won't disturb me, with the O. R. Cry all you want to! It don't disturb me!; the E. R., All right, she said after a pause ..., with the O. R. All right, she says after a pause ...

(4) There was a revision to achieve syntactic consistency - This change is often in response to a prior miscue. Examples might include the E. R. He seemed to like the dictionary lessons, too, with the O. R. It seemed like the history lessons too. (Here it can be seen that the initial miscue between he and it resulted in the need to omit too later in the sentence). A second example could involve the E. R., There two men were signaling to each other, and one was pointing to the clock, with the O.R.

There were two men who were signaling to each other, and one was pointing to the clock. (In this case the insertion of were necessitated the insertion of who.)

57 SMANT Semantic Miscues

Did the miscue involve semantics? Within this category only substitutions are possible.

(0) No - A substitution at the semantic level was not involved.

(1) A synonym substitution was involved - This can involve two words that function as synonyms only for the length of the sentence or story. For example, substituting ran for raced; substituting my for the in the sentence: Suddenly, I jumped from the chair ..., or substituting my book for the dictionary in the sentence: I opened my book and picked out a word that sounded good.

(2) The word substituted had an associated meaning (at least within the length of the sentence, or story) with the E. R. -

For example, substituting dropped for cooped in the sentence: Andrew's eyes dropped; substituting with for to in the sentence: After he talked to his mother and father for a while, they took him into the bedroom.

(3) The word substituted was an antonym of the E. R. - For example, substituting don't for do in the sentence: I guess they do have a soothing sound.

(4) The miscue involved a similar name substitution such as saying Mr. Broadway for Mr. Barnaby.

53 INTON INTONATIONAL MISCUES

Intonation was involved in the miscue. This can involve a substitution, omission or insertion.

(1) The intonation within a word was effected - This miscue might be closely tied to other internal changes that the reader makes, such as a phonemic change. So that savage becomes ser - vage when a phonemic and intonational change both occur.

(2) The intonation between words was affected.

(3) The relative intonation in the phrase or sentence was affected - For example, The E. R., Let's see what we can find in the S's, I said. Savage: wild: ... became the O.R., Let's see what we can find in the S's, I said, Savage: wild: ...

(4) The intonation at the end of a phrase or sentence was affected. An example could involve an E.R.: The typical baby! with an O.R. of: The typical baby?

(5) A conjunction was substituted for a phrase or sentence juncture - An example involved the E. R.: At last he leaned over the crib. I held my breath, with the O.R.: At last he leaned over the crib and I held my breath.

59 SYNAC SYNTACTIC ACCEPTABILITY

Here the question is asked concerning whether the O.R. is syntactically acceptable.

(0) No - The O.R. was not syntactically acceptable.

(1) The O. R. was syntactically acceptable only with what came prior - For example, an E. R. read: Andrew stopped crying and tried to take hold of the dictionary. The child's O.R. was: Andrew stopped crying and tried to ... hold of the dictionary. Through the word hold the sentence is syntactically acceptable.

(2) The O.R. is syntactically acceptable only with what comes after the miscue - For example, an E. R. read: I said, It helps me to remember the word definitions if I read them out loud. The child's O.R. was: I said, It helps me to remember the word definition if I read (past tense) them out loud first. In this case the miscue is acceptable with the final portion of the sentence but not within the sentence as a whole.

(3) The miscue was syntactically acceptable only within the sentence - An E. R. was:

Though I'm not sure he needs one ...

One subject's O.R. was: Though I'm sure he needs one ... The omission of not resulted in syntax which was fully acceptable within the sentence but not within the passage as a whole.

(P) The miscue resulted in a syntactic pattern which was fully acceptable in the passage - One example would involve the E. R.: Suddenly I jumped from the chair ..., with the O.R. being: Suddenly, I jumped up from my chair .... In this case the inclusion of a particle did not affect the syntactic acceptability of the sentence within the passage.

60 SEMAC SEMANTIC ACCEPTABILITY

In this case the question was asked concerning whether the O.R. was semantically acceptable.

(0) No - The O.R. was not semantically acceptable.

(1) The O.R. was semantically acceptable only with what came prior - For example, an E. R. read: As the lady led me toward his office, she said, Mr. Barnaby is a very busy man. and the O.R. was: As the lady led me toward his office he said, Mr. Barnaby is a very busy man! The miscue in this case is totally syntactically acceptable, but semantically acceptable only with the portion of the sentence coming prior.

(2) The response was semantically acceptable only with the portion of the sentence coming after the miscue - For example, an E. R. reads: And not only that, but you may be a real valuable gold mine, with the O.R.: And not only that, but you may be a real valuable good mine.

In this case the miscue is both syntactically and semantically acceptable only with the portion of the sentence coming after.

(3) The miscue was semantically acceptable in the sentence only - For example, an E. R. was: Finally he looked at me. and the O.R. was: Finally he looked at you. The O.R. forms a perfectly acceptable sentence semantically, but it does not fit semantically within the text passage.

(4) The miscue was totally semantically acceptable within the passage - For example, one E. R. read: My baby brother Andrew made a few silly baby sounds and began to cry, and the O.R. was: My brother Andrew made a few silly baby sounds and began to cry. The omission of baby does not affect the semantic acceptability of the O.R. with the passage.

61 INTAC INTONATIONAL ACCEPTABILITY

The question here concerned whether the O.R. was intonationally acceptable.

(0) No - The O.R. was not intonationally acceptable.

(1) The intonation pattern was acceptable - It does not conflict with the rest of the passage. This does not have to be the preferred form: it can be any acceptable form.

(2) The intonation was acceptable only with the prior portion of the text.

(3) The intonation was acceptable only with the portion of the text that comes after the miscue.

62 SEMCH SEMANTIC CHANGE

Here the question was asked as to whether the miscue has resulted in a change of meaning.

(0) No - The meaning had not been changed. For example, an E. R. was: Suddenly, I jumped down from my chair, a wonderful idea implanted in my brain, and the

O.R. was: Sudderly I jumped up from my chair, a wonderful idea implanted in my brain. Here the insertion of up does not change the meaning.

(1) Yes - Meaning was changed. An example here could involve the E. R.: As the lady led me toward his office, she said ..., with an O.R. of: As the lady led me toward his office, he said ...

(9) It was doubtful whether meaning had been changed.

63 SYNCH SYNTACTIC CHANGE

Here the question was asked as to whether the miscue resulted in a syntax change.

(0) No - The miscue did not cause a change in syntax. This would be the case with the E. R.: I think just about everybody likes babies, when the O. R. is: I think just about anybody likes babies.

(1) Yes - The miscue resulted in a change

of syntax. This would be the case with the E. R., Mr. Barnaby slumped into a chair, when the O.R. is: Mr. Barnaby slumped back into a chair.

(9) It was doubtful whether syntax had been changed.

APPENDIX B

READING RESEARCH

Comprehension Rating

NAME_____ NO._____

1. Recall

a. Accuracy	(5 points)	_____
b. Completeness	(5 points)	_____
c. Sequence	(5 points)	_____

2. Characterization

a. Recall	(5 points)	_____
b. Depth	(5 points)	_____

3. Plot

a. Kernel	(5 points)	_____
b. Sub-plot	(5 points)	_____
c. Subtleties (humor or pathos)	(5 points)	_____

10/66 Form IV

APPENDIX C

No._____

Reading Research Personal Data

Name_____Sex_____Room_____School_____

MA._____CA._____

Grade___ _____Parent Occupation_____

Living with:_____Siblings:_____

Educational Status of Parents_____

Past Residences_____

_____

Past Schools_____

_____

Ethnic Backgrcund_____

_____

_____

Achievement Scores
Read Voc._____Read Comp._____

Reading Habits:_____

_____

_____

Special Notes_____

_____

_____

_____

_____

_____

Form #1 1/26/67

OE 6000 (REV. 9-66)

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OFFICE OF EDUCATION

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600 RETRIEVAL TERMS

601 **Linguistics** **Reading Errors**
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604 **Oral Reading** **Reading Behavior**
605 **Reading Taxonomy** **Reading Skills**
606

607 IDENTIFIERS

800 ABSTRACT

801 **Psycholinguistic knowledge and techniques can be used as the basis for research into the reading process, with a view to the development of a reading theory. The research herein reported represents the initial phase of such a program and examines reading behavior on a comprehensive basis. Following phases will center on specific area which have been outlined within this study. The assumption upon which the research is based is that reading miscues are generated by the same process that generates expected responses.**

The oral reading behavior of twelve children reading a story selected from a basal reading text was examined. The children were in the 4th and 5th grades and were determined by informal test and teacher evaluation to be proficient readers. Reading Miscues (responses not expected to be generated from the written symbol) formed the focal point of the study. Initial analysis of miscues lead to the formulation of a Taxonomy of Reading Miscues.

Twenty-eight questions were asked concerning each miscue. Change and acceptability were examined both semantically and syntactically at the phonemic, morphemic and syntactic levels. Miscues were examined, compared, and contrasted in terms of their component parts, relative value, and levels of involvement.

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